FIFTY CENTS

Exclusive Photo Story:
New Kenlea Crafts Plant

Designer of the Month

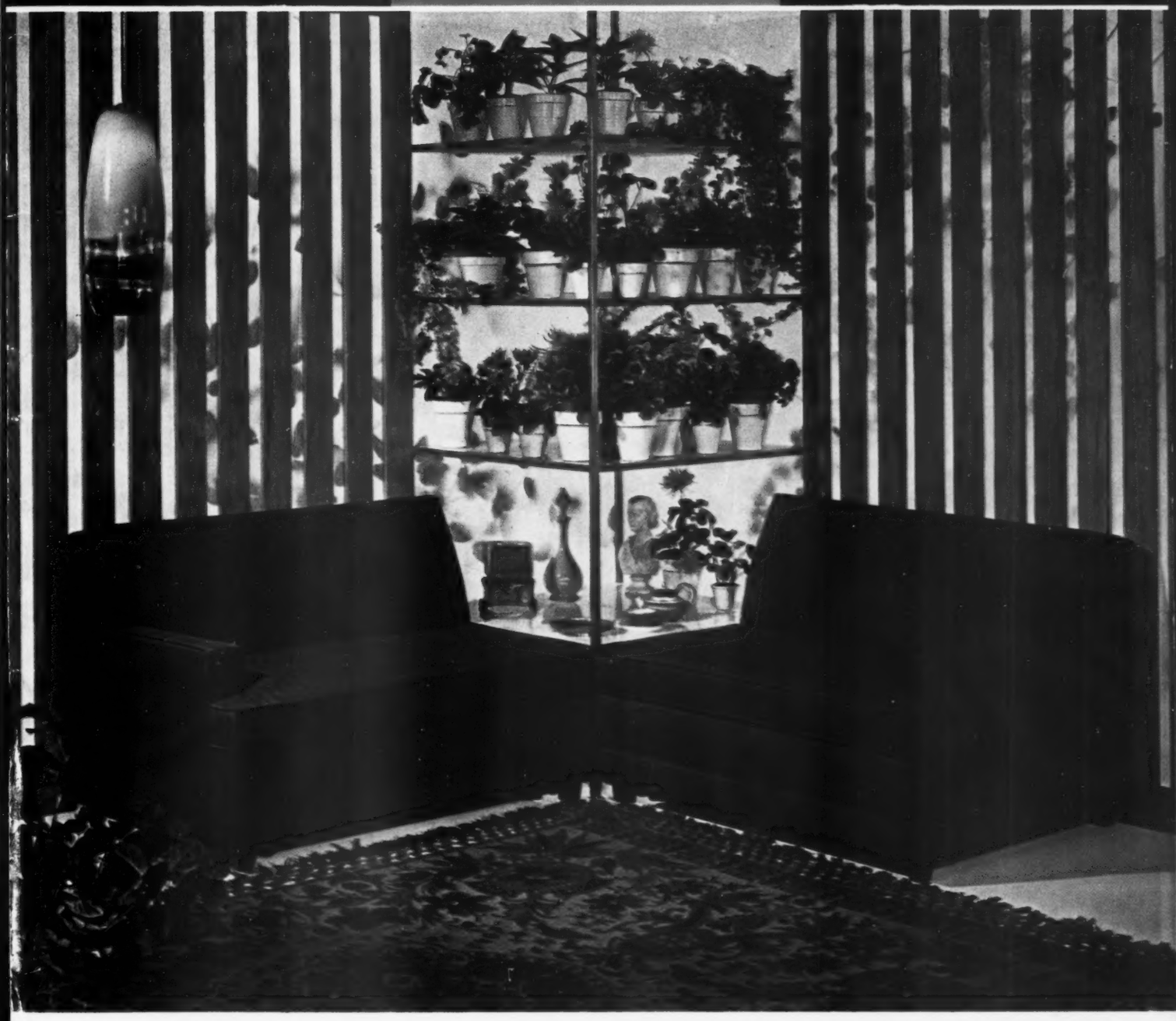
JUNE 1961

Italian Manufacturers
Try Ingenious Designs

How to Price Furniture

FDM

Furniture Design & Manufacturing



New Simmons Munster Plant Applies Advanced Techniques

If you edge-glue
1,500 to 10,000
bd. ft. per day, this

Onsrud-Berthelsen Press

...pays for itself
in 18 months

If you still operate clamp carriers anywhere within this range of output, compare *your* direct labor costs with these: Two men working with a 50" x 100" Onsrud-Berthelsen press with powered batch feed loading table can edge-glue 4,000 bd. ft. or more in eight hours. Total equipment investment, installed and running.....$12,000. In most cases, labor savings alone will return your full equipment cost in just 18 months or less. **And Onsrud will guarantee the production you buy!**

There is no easier way to improve edge-gluing efficiency. Your investment remains low when compared with electronic edge-bonding machinery, and you avoid complicated, high-priced maintenance.

AN ADDED ADVANTAGE . . . YOU CAN VENEER, TOO!

With an Onsrud-Berthelsen edge-gluing press in your shop, you are ready to do straight veneering, or simultaneous veneering and edge-gluing any time the need arises. No adjustments, no attachments required.

SEE WHAT YOU CAN SAVE

Send us a brief description of your edge-gluing operation. Within 24 hours, Onsrud engineers will recommend specific equipment . . . outline specific savings. Write today!

20 STANDARD SIZES

Platen sizes 44" x 88" to 66" x 228". One or two openings. Stock thickness up to 3". Compensates for variations in stock width up to 6". Hydraulic side pressure and platen pressure are independently adjustable, and both remain constant throughout cycle. Choice of side pressure ranges: 150# per inch of press length, or 300 psi. Higher pressures optional.

Edge-gluing and/or veneering in one press is an original Onsrud-Berthelsen concept, covered by U.S. Patent No. 2,784,754.

40th YEAR

HYDRAULIC PRESS DIV.

ONSRUD

MACHINE WORKS, INC.

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FOR DATA CIRCLE FDM NO. 1894

Everything you need in foam from Firestone

Fed up with paying for foam rubber you don't need? Firestone has fourteen widths in pincore to help you cushion your quality lines with a minimum of waste cuts—in some cases with no waste at all!

Look at this: Firestone flat pincore comes in eight widths with a square edge that's perfect for your slim-lined and Scandinavian moderns. Or you can buy it with a $\frac{7}{8}$-inch crown in six widths for the rich luxury look that's popular with so many designers and buyers. Firestone crown pincore gives you a molded-in rounded edge to keep welt seams arrow-straight, make cushion-covering easier, too. And you get the look of custom-molded cushions for 30% less!

Firestone flat and crown pincore comes in standard 102-inch lengths or cut to your order. Because of its tiny core diameters, it can be cut in any shape to give you a smooth leading edge. And you need only about $\frac{1}{4}$-inch pull-in per foot to assure you trim fitting covers with sales-appealing lines. Get the best known name in foam and save money, too. Call the men in your nearest Firestone sales office, listed at left below.

Copyright 1961, The Firestone Tire & Rubber Company

For more foams, better foams, in more sizes to save you time and money—call your nearest Firestone Sales Office now or consult the foam rubber classification in the Yellow Pages for your local Firestone Foam Distributor:

Akron 17, Ohio, HEmlock 4-1671, The Firestone Tire & Rubber Company, 1200 Firestone Parkway
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Chicago 54, Illinois, SUperior 7-4825, Firestone Rubber & Latex Products Company, 10-163 Merchandise Mart
Dallas, Texas, FLeetwood 1-9901, Firestone Rubber & Latex Products Company, 9216 Harry Hines Boulevard
Fall River, Massachusetts, OSborne 6-8511, Firestone Rubber & Latex Products Company, 1 Firestone Avenue
Indianapolis, Indiana, MElrose 5-1629, Firestone Rubber & Latex Products Company, 200 South Missouri Street
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Memphis 7, Tennessee, JAckson 5-3621, Firestone Tire & Rubber Company, P.O. Box 4728
New York 23, New York, PLaza 7-6200, Firestone Rubber & Latex Products Company, 28 West End Avenue at 61st Street

Firestone
FIRESTONE RUBBER & LATEX PRODUCTS COMPANY
FOAM
Fall River, Massachusetts

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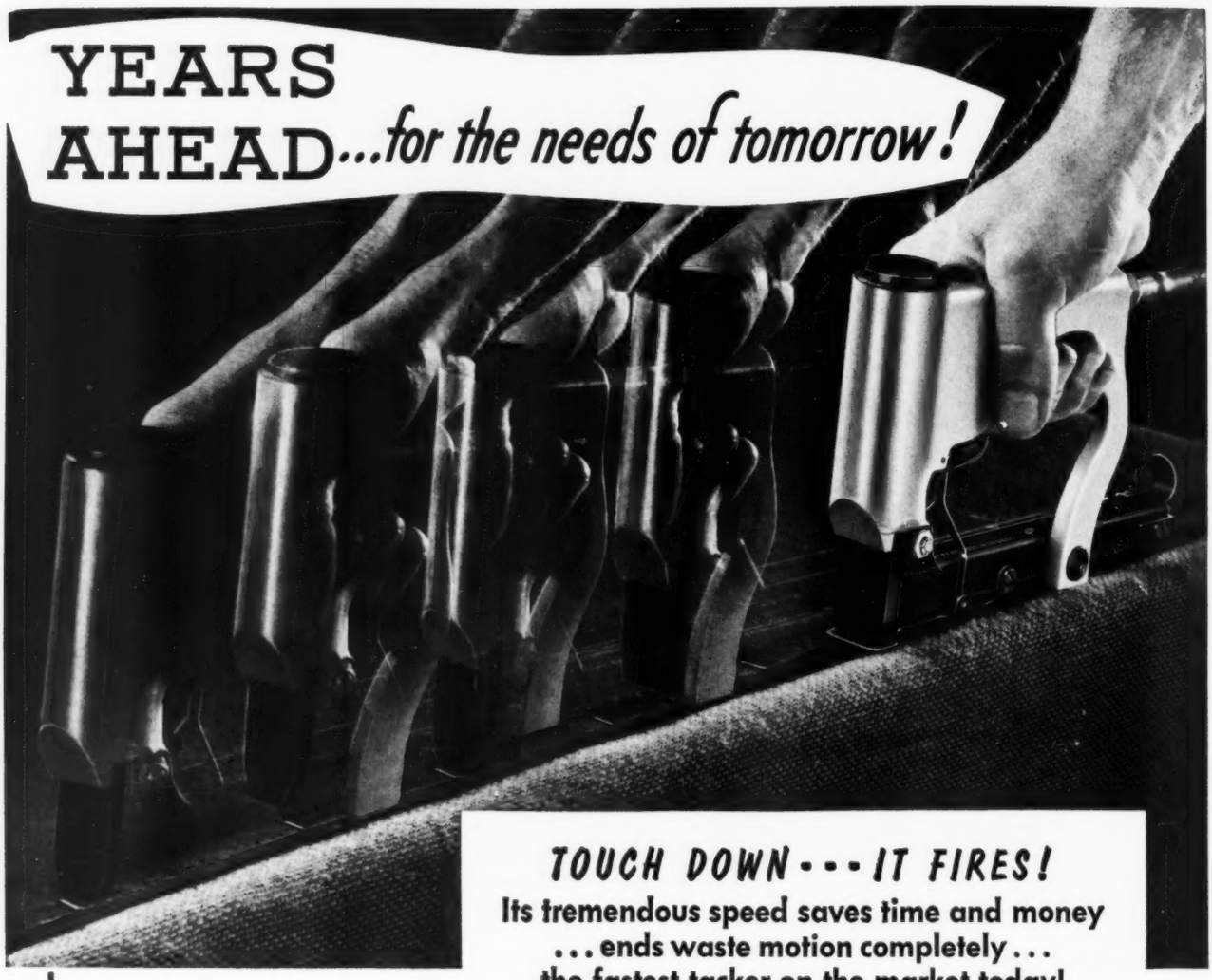
YEARS AHEAD...*for the needs of tomorrow!*



TOUCH DOWN - - - IT FIRES!

Its tremendous speed saves time and money
... ends waste motion completely ...
the fastest tacker on the market today!

This newly developed tacking tool has a *feather touch* tripping action —bottom fire tested 22% faster than trigger fire—operates on 70 to 100 lbs. air pressure.

Anticipating future needs, SENCO began "looking ahead" years ago and has kept an eye on the needs of tomorrow ever since.

SENCO engineers have worked hand in hand with manufacturers for years in the development of tacking tools to meet industries interest in better products —and remember, the reason for every product success is a **BENEFIT . . .**

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- **to the people who create the product**

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FOR DATA CIRCLE **FDM NO. 1906**

FDM

Furniture Design & Manufacturing

JUNE 1961
VOLUME 33 NUMBER 6

The Management Publication Serving the Furniture Manufacturing, Upholstering and Bedding Industries

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OUR COLOR COVER—

Plum-colored Simmons Hide-A-Bed is one of the many products manufactured in the firm's newest factory located at Munster, Ind. The story of the quality production at this plant, largest of Simmons' 28 manufacturing facilities, is found on page 34.

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EDITORIAL

More Good Things Coming

Since its inception we have spared nothing to make FURNITURE DESIGN & MANUFACTURING most useful to you. Another milestone in this effort will be evident in our July issue.

Two new editorial specialists have been added to extend our information services.

First, there will be a new department devoted to upholstery fabrics. Styling, colors, construction, and raw materials involving furniture textiles will be covered. We will draw information from these important influences and sources: suppliers of fibers, yarns, and basic textile raw materials; manufacturers, converters, and importers of upholstery covers, including plastics; designers and specifiers of upholstery fabrics and furniture.

A special editorial representative has been retained by FDM in New York to cover upholstery fabric assignments. She has had several years' experience in the home furnishings field with both trade and consumer magazines. Her reports will be authoritative, timely and penetrating.

The visual presentation of upholstery fabrics in FDM will be executed with imagination and reproduced to quality standards in keeping with this magazine's character.

Second, our *Furniture Engineering* section will be broadened and improved with the addition of a new monthly column on cost reduction and control. Seasoning of lumber, machining of materials, handling of finishing equipment, utilization of manpower, and incentives systems will be covered in the series. A noted authority with broad practical experience will author this feature which will be must reading for production and engineering management.

But the growth of FDM does not stop here. There are *still more* good things coming in FDM . . . to keep you better informed.

R. A. Helmers, Editor

PLAN GROWTH THROUGH FACTORING

IT'S A

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INVESTMENT FOR THE FUTURE

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OFFERS YOU THIS "FACTORING PORTFOLIO"

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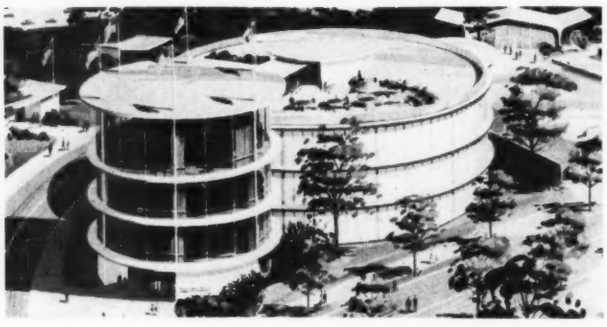
FOR DATA CIRCLE FDM NO. 1880

FDM
FURNITURE DIGEST FOR MANAGEMENT

For more complete information on any of the Bulletins below, just circle the Bulletin Numbers on the READER SERVICE CARD which you will find elsewhere in this issue. A copy of the source material will be sent to you promptly.

Management Notes

G. M. DIEHL MACHINE WORKS, Wabash, Ind., will hold a continuing series of full-day schools for woodworking machine operators and maintenance men beginning June 19, at *Garrison Machinery Co.*, Statesville, N.C. The first of the one-day clinics will deal with tapeless veneer splicing and will be repeated daily until all personnel from plants in the area have been serviced. Subsequent clinics will be devoted to woodworking machinery, including ripsaws, molders and lathes. Possible future locations for repeating the entire educational program in other furniture production areas include Boston, Dallas and the Diehl plant in Wabash, Ind. For further information, circle *Bulletin J-175.*



SHOWCASE OF AMERICAN HOMEFURNISHINGS, to be known as *Pavillion of American Interiors,* is planned for the 1964-65 World's Fair in New York. The three-story building will house exhibits of outstanding examples of noteworthy furniture and accessories. Of the total area of 68,000 ft., 34,000 ft. will be used for exhibits of approximately 100 firms and a special Designers' Gallery. Exhibit spaces range from a minimum of 100 sq. ft. to a maximum of 1,000 sq. ft. The Fair management anticipates an attendance of 70 million visitors during the 1964-65 run. For more information, circle *Bulletin J-176.*

FACTS ABOUT LEASING new and used equipment are contained in a new, illustrated brochure titled *The Engineered Equipment Lease* published by *United States Leasing Corp.* The brochure explains how any type or amount of equipment can be obtained on lease. Subjects include conservation of capital and credit; tax-timing benefits; balance sheet effect; cash flow improvement; recovery of capital through sale and lease-back; and other advantages of leasing. For a copy, circle *Bulletin J-177.*

NORTHWEST FURNITURE MANUFACTURERS ASSN., at its recent meeting, elected *James W. Pettit,* president; *Fred Leonetti,* vice president and *William L. Huget,* reelected secretary-treasurer.

FURNITURE MANUFACTURERS ASSN., Grand Rapids, Mich., reelected its present slate of officers to one-year terms. They include president, *S. W. Tamminga;* vice president, *J. G. Griswold, Jr.;* and secretary-treasurer, *R. H. Bennet, Jr. F. W. Dunn* is managing director.

HOWELL DESIGN ASSOCIATES, 53 Transit St., Providence, R. I., has been formed by *Marie and James A. Howell,* formerly associated with design firm *Cicchelli-Howell Associates.*

LOS ANGELES HOME FURNISHINGS MART reelected *Herman Kranz,* Morris Furniture Co., president. Others elected to serve include *H. E. Toor,* Furniture Guild of California, Inc., vice president; *R. H. Mason,* Imperial Cabinet Co., treasurer; and *Eddy S. Feldman,* secretary and managing director.

FINE HARDWOODS ASSN. has qualified and licensed two new polyester finishes for use in Finishield process. Approved were Polymac, a polyester finish produced by *Lawrence-McFadden Co., Inc.,* under license agreement with *Sonneborn & Rieck, Ltd.,* London, and Lilly Polyester coating materials produced by the *Lilly Co.*

FURNITURE FACTORIES MARKETING ASSN. OF THE SOUTH, INC. elected *S. H. Millender,* White Furniture Co., president, succeeding *T. A. Finch,* Thomasville Chair Co., who became chairman of the board. Other officers elected were *J. S. Young,* Dixie Furniture Co., vice president, and *John C. Bernhardt,* Bernhardt Furniture Industries, secretary-treasurer.

CHICAGO MARKET NEWS, trade newspaper published semi-annually at the time of the International Home Furnishings Markets in Chicago, was acquired from *The Irving-Cloud Publishing Co.* by *Lundy News Service, Inc. Oscar Lundy,* president of Lundy News will be editor and publisher; is moving his office from the American Furniture Mart to the Merchandise Mart, Chicago.

LUNDY

TONK

METZ

NATIONAL ASSN. OF FURNITURE MANUFACTURERS announced the resignation of *Percy Tonk* as treasurer, following 14 years of service in that position. He was succeeded by *Jerry Metz,* J. L. Metz Furniture Co., Inc.

A HOUSING BUREAU has been established at 134 N. LaSalle St., Chicago, to help buyers attending the International Home Furnishings Market at the Merchandise Mart, June 18 to 24, obtain lodging. Fifteen hotels and five motels, in the downtown area or in close proximity to the central district, are participating in the service.

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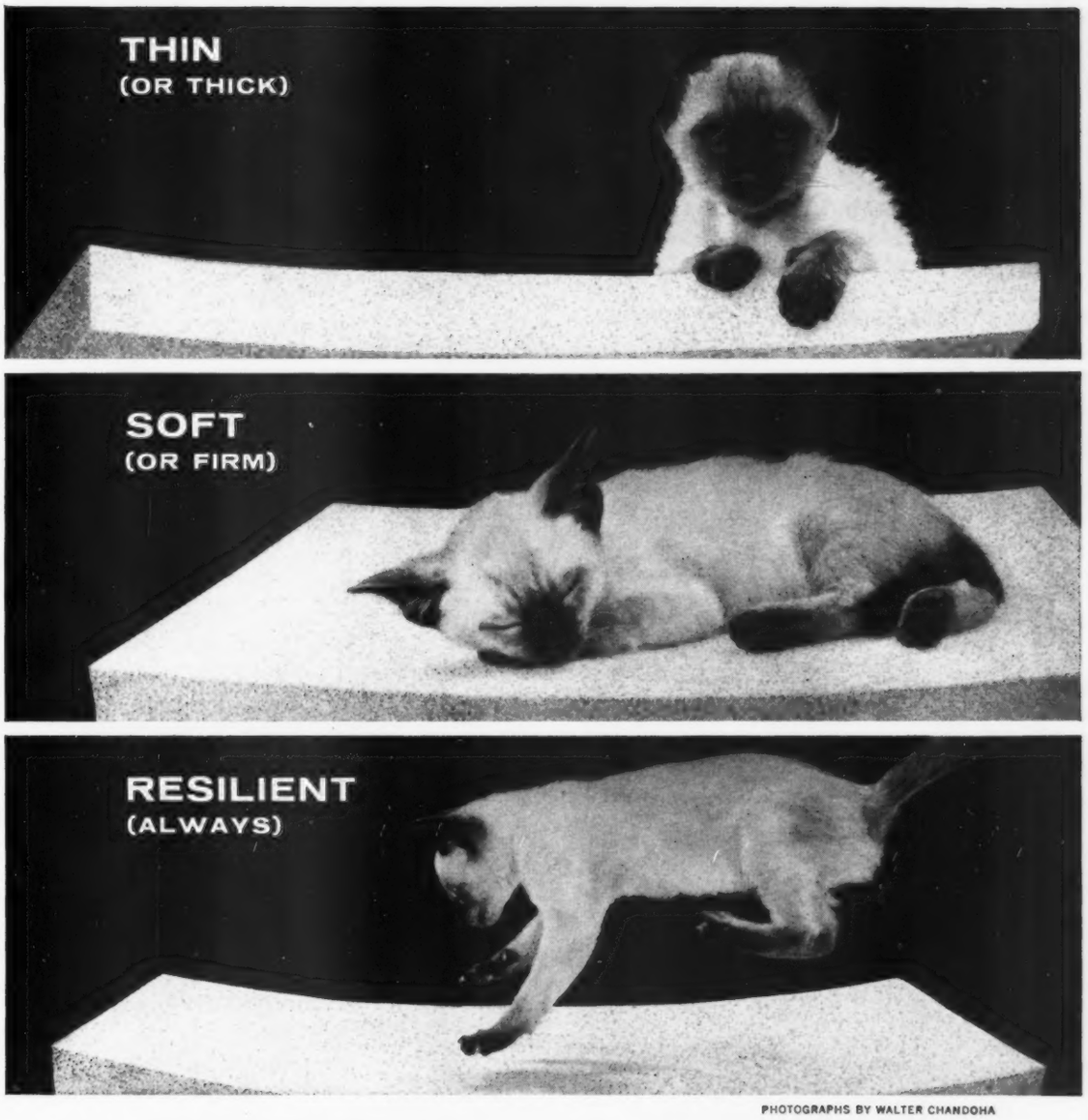

PHOTOGRAPHS BY WALTER CHANDOHA

NEW VERSATILE CUSHIONING

from urethanes foamed with FREON®

Now, you can choose the exact type of cushioning you want . . . because of a new, controlled way of blowing urethane foams with Du Pont "Freon" as an auxiliary blowing agent.

Need an extra-thin cushion for a new design? Want a "soft as a kitten" cushion? Want a really resilient cushion that will stand up under tough use? You can get all these qualities with urethane foams blown with Du Pont "Freon" as an auxiliary blowing agent. And best of all, this high-quality foam costs no more than other cushioning materials.

Ask your foam supplier about the versatility . . . the comfort . . . the design possibilities of urethane foams blown with Du Pont "Freon". Or for the name of a supplier, write E. I. du Pont de Nemours & Co. (Inc.), "Freon" Products Div., N-2420, Wilmington 98, Delaware.

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BLOWING AGENTS

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. . . *through Chemistry*

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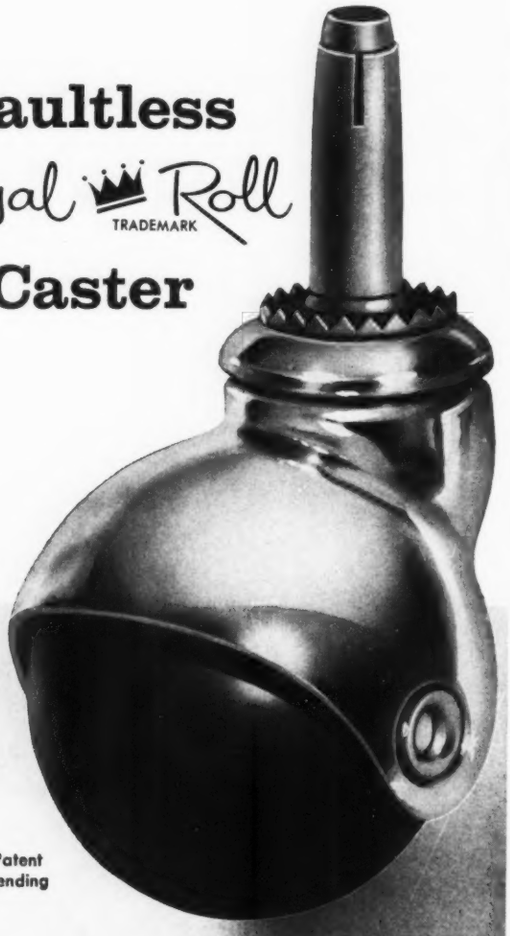
Brand New Beauty

Time-Tested Construction

Faultless

Royal Roll TRADEMARK

Caster



Patent Pending

You add a smart *and* functional touch to furniture with the new Faultless Royal-Roll Caster. Faultless famous double ball bearing swivel construction—the result of almost three quarters of a century of caster making experience—is combined with a new design concept to give a caster that responds to the slightest touch, saves floors, gives furniture a new distinction. The Royal-Roll is available with a choice of 3 stem types and 5 finishes.

Faultless Casters

Write for full particulars

FAULTLESS CASTER CORPORATION

Evansville 7, Indiana

FOR DATA CIRCLE FDM NO. 1870

CONTINUED FROM PAGE 8

PAMCO, a design and sample making facility for furniture manufacturers, was established by *Martin Hird* at 304 E. 54th St., New York City. The firm is aimed primarily at helping small manufacturers needing samples for trade shows. Pamco will design the line, make samples, and if required, build some of the special jigs and fixtures necessary for production.

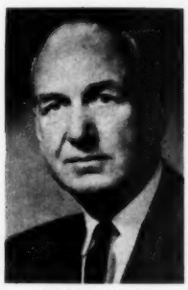
FLORENCE KNOLL, Knoll Associates, Inc., was awarded the 1961 Gold Medal for Industrial Design by the American Institute of Architects. This was the second time an award was made in the Industrial Design field, and the first to a woman, since the Fine Arts Awards were established by A.I.A. in 1921. Mrs. Knoll was chosen in recognition of "her broad role in developing interior design of manufactured furniture, textiles and interior design accessories in the service of contemporary architecture here and abroad".

SOUTHERN HARDWOOD PRODUCERS, INC., Memphis, Tenn., appointed *George C. Romeiser* secretary-manager succeeding *L. J. Heatherly* who retired. Romeiser, who previously was secretary-manager of the *American Walnut Manufacturers' Assn.* in Chicago, was replaced by *Donald H. Gott,* former sales manager of Marshfield Mill, Roddis Div. of Weyerhaueser Co.

ROBERT KENZIE DILLON ASSOCIATES was recently formed in Bloomington, Ind. by *Robert K. Dillon,* president. Serving as a furniture consulting company, the firm specializes in marketing, product and design development, sales penetration and promotion.

ROMEISER

DILLON



HEINZELMAN

WOODWORKING MACHINERY MANUFACTURERS ASSN. elected *Karl J. Heinzelman,* Union Tool Corp. as president, succeeding *Leslie H. Geddes,* Greenlee Brothers and Co., elected to the executive committee. *Ralph B. Baldwin,* Oliver Machinery Co., was elected vice president; *John M. Gillespie,* Newman Machine Co., secretary; and *F. G. Walker,* Jones Superior Machine Co., reelected treasurer. The association selected North Carolina as the site for the 1963 Machinery Show. *Judge Williaw M. York,* Newman Machine Co., was appointed president and treasurer of the American Woodworking Machinery Show Corp.

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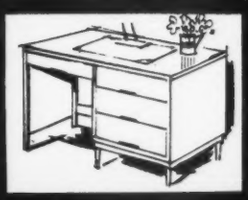
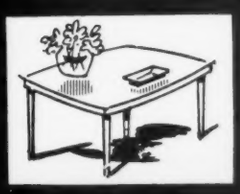
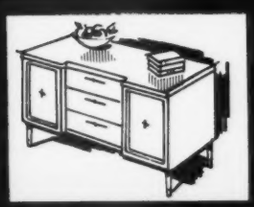
"New Look" Mahogany







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the ultimate in furniture surfacing

New Look Mahogany was created especially for the furniture industry. Its distinctive flat cut graining is produced in two forms—one suitable for every type of case goods; the other, with smaller cathedrals, for occasional tables. It is available in four luxurious colors: silver, cordovan, rich brown and beige. A satin-smooth matching surface of exquisite beauty and durability, NEVAMAR comes to you ready to apply—eliminates costly finishing operations. Give **your** furniture added sales impact with these new, high-styled NEVAMAR surfaces. Samples are yours for the asking.

Use WYNENE T-EDGING for colorful harmony or contrast, with your NEVAMAR surfaces.

This is
NEVAMAR®

- A HIGH PRESSURE LAMINATE
- RESISTANT TO CIGARETTE BURNS
- WITHSTANDS BOILING WATER
- DESIGNED FOR LONG LIFE AND LASTING BEAUTY
- WON'T CRAZE, CRACK OR PEEL IN NORMAL USE
- NOT AFFECTED BY ALCOHOL, FRUIT ACIDS, AMMONIA ORDINARY INK . . . OR TIME
- NEVER NEEDS PAINTING
- EASY TO CLEAN

NEVAMAR has earned this seal — REPLACEMENT OR A REFUND OF MONEY IF NOT AS ADVERTISED THEREON — Guaranteed by Good Housekeeping

NEVAMAR conforms to NEMA specifications

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Toscana dresser with 6 drawers, 3 shelves, by Dixon-Powdermaker Furniture Co., Jacksonville, Florida.

Honduras mahogany chair with zippered cushions by Gilliam Furniture, Inc., Statesville, North Carolina.

Hand painted, Pennsylvania Dutch green cellarette by Jasper Cabinet Co., Jasper, Indiana.

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FRANKLIN LIQUID HIDE GLUES

FOR DATA CIRCLE FDM NO. 1874

CONTINUED FROM PAGE 10

APPOINTMENTS

H. K. PORTER CO., INC., Pittsburgh, Pa.: *John W. Wolcott* appointed manager of Disston Div., manufacturer of hand and power tools. He was former plant manager of *Weatherhead Co.*

GENERAL PLYWOOD CORP., Louisville, Ky. named *John M. Williams,* formerly with *Walton Plywood Co.,* as sales representative for its wood finishing licensing program for Pacific Coast mill operations.

FULTON COTTON MILLS, Atlanta, Ga.: *Harry P. Sheets* named buyer and manager of the cotton department. He was previously employed with *C. D. Tuller and Co.* and *Cotton Producers Assn.*

NATIONAL STARCH AND CHEMICAL CORP., New York City: *Joseph D. Russo* named supervisor of the adhesive technical development laboratory at San Francisco, Calif.

BLACK AND DECKER MANUFACTURING CO., Towson, Md.: *Robert C. Tyo,* president of *DeWalt, Inc.,* subsidiary of Black and Decker, elected vice president of Black and Decker-DeWalt operations, a newly-created position.

BREWER-TITCHENER CORP., Cortland, N.Y., metal working company: *Daniel J. Coughlin,* sales manager of marine and industrial hardware division promoted to general sales manager, succeeded by *Raymond J. Considine.*

WOOD FIBREBOARD CO., Albany, Ore., manufacturer of Duraflake wood-formed board, appointed *Irby S. DeFenelon Co.,* 150 W. Market St., Indianapolis, Ind. as representative in Indiana, western Ohio, eastern Illinois and northern Kentucky.

FEDERAL INDUSTRIES, Belleville, N.J., named *Fine Tex Fabrics Corp.,* 1301 English St., High Point, N.C. as sales representative in the South.

COLLINS & AIKMAN, New York City, manufacturer of upholstery fabrics: *Stephen B. Bromley,* formerly with *C. J. LaRoche & Co., Inc.,* advertising agency, appointed director of advertising and sales promotion. He succeeds *Charles L. Conley* who resigned.

GISHOLT PLASTICS, Madison, Wisc., manufacturer of custom-molded fiberglass and molded wood products appointed *Ray Heizer* as sales manager.

NORFOLK PRODUCTS CORP., Norfolk, Conn., hardware manufacturer: *Elmer J. Murray,* former eastern division manager for Portable Electric Tools Inc., named vice president in charge of sales.

ABITIBI CORP., Detroit, Mich., manufacturer of hardboard and insulation products appointed *Alan B. Cook* general sales manager and a member of the board of directors. He was formerly vice president of sales at Grand Rapids Gypsum Co.

TO PAGE 14

Collecting money is aggravating to yourself, antagonistic to customers, incompatible to selling. Meinhard has the money to pay cash as you ship goods—sooner if you want. As experts in credit and collections, we maintain and strengthen your customer relations.

MEINHARD & COMPANY, INC., 390 PARK AVENUE SOUTH, NEW YORK 16, N. Y. • LOS ANGELES • LONDON • ZURICH

FOR DATA CIRCLE FDM NO. 1887

CONTINUED FROM PAGE 12

ANCHOR ADHESIVES CORP., Flushing, N.Y., named *Victor E. Pierson* technical sales manager. He was formerly with the adhesives division of U.S. Rubber Co.

B. F. GOODRICH CO., Akron, O.: *George B. Koch, Jr.,* advertising manager, named merchandising manager for B. F. Goodrich Industrial Products Co., a division.

GILBERT SPRUANCE CO., Philadelphia, Pa., manufacturer of wood and metal finishing products appointed *Horace S. Felton, Jr.,* sales promotion manager. He held a similar position with Felton, Sibley & Co.

NORDSON CORP., Amherst, O., manufacturer of airless spray coating systems, promoted *Arlan Heiser,* former representative in southern Ohio and Kentucky to sales manager of Nordson Pacific in California. He was replaced by *William C. Durning.*

MEINHARD & CO., INC., New York City factoring firm, appointed *Otis L. Holland* as representative in the Carolinas and Virginia, with offices in Greensboro, N.C.

PARKWOOD LAMINATES, Wakefield, Mass., named *Edward A. Owens* sales engineer for New York, New Jersey and eastern Pennsylvania and promoted *Murray Smith,* architectural specialist, to sales manager for the Philadelphia, New Jersey and New York City area.

GISHOLT PLASTICS, Madison, Wisc., named *George K. Frischer* of *Plastic Sales and Manufacturing Co.,* 3023 McGee Trafficway, Kansas City, Mo., representative in Nebraska, Kansas and eastern Missouri.

BORG-WARNER CORP., Marbon Chemical Div., Washington, West Va., named *John Haher* sales manager for Cycolac brand polymers, succeeding *William A. Suiter* promoted to vice president in charge of marketing.

ROCKWELL MANUFACTURING CO., Pittsburgh, Pa., named *E. L. Tabat* vice president of marketing for Delta and Porter-Cable power tool divisions; *J. J. Diamond,* eastern sales manager and *B. E. Coon,* western sales manager.

FALLS ENGINEERING AND MACHINE CO., Cuyahoga Falls, Ohio, named *Jack Wright* southwestern sales representative, covering Mississippi, Louisiana, Arkansas, Oklahoma, Texas and Tennessee, west of the Tennessee river.

REEVES BROTHERS, INC., New York City, manufacturer of textile and industrial products, appointed *Sunbury Textile Mills, Inc.,* Sunbury, Pa., and *Kenyon Piece Dye Works, Inc.,* Kenyon, R. I., licensed laminators of Curonized Process, a patened heat laminating process used on all types of knitted fabrics.

FRANKLIN GLUE CO., Columbus, O., has added *Robert C. Gill* to its staff. He formerly was in charge of wood adhesive development and technical service for Peter Cooper Corp.

WEYERHAEUSER CO., Tacoma, Wash.: *William H. Roddis* former technical director of the Roddis division in Marshfield, Wisc., named hardwood specialist at the Longview, Wash. technical center, a newly created post; and *Earl O. Walters,* former research engineer for *Western Pine Assn.,* named to the staff of the lumber and plywood development department.

BELDING HEMINWAY CO., New York City, thread, fabric and chemical manufacturer, elected *Richard T. Kropf* president and chief administrative officer, succeeding *Fred L. Johnson* who retired. Mr. Kropf was formerly vice president and director of research.

PIONEER PLASTICS CORP., Sanford, Maine, appointed the following distributors: *Pacific Plywood Products,* 1249 S. 12th St., Louisville, Ky.; *Lane Associates, Inc.,* 703 Long Lane, Upper Darby, Pa.; *Dealers Supply Co.,* Airport Rd., Greenville, S.C., and *New Orleans Sash and Door Co., Inc.,* 1212 S. Roman St., New Orleans, La.

SEALY, INC., Chicago, appointed *Irwin M. Cohen* to its plant sales staff in Philadelphia.

STORKLINE CORP., Chicago, appointed *Richard C. Siebert* assistant to the vice president of marketing, *Joseph Zarish.* The firm also commissioned *Arthur Umanoff* and *Morton Goldsholl,* industrial designers, to design infant and juvenile furniture.

Supplier Announcements

MASONITE CORP., Chicago hardboard producer, is constructing a 10-story building at Wacker and Washington in Chicago. The firm plans to move into its new general offices in spring, 1962.

GENERAL TIRE & RUBBER CO., Toledo, Ohio recently installed a new high-speed calender and allied machinery in its Tolex department. The calender is capable of producing vinyl fabrics, sheetings, semi-rigid and rigid plastics.

MARSH WALL PRODUCTS, INC., Dover, O., introduced a new gold foil label for use by furniture manufacturers using plastic-surfaced Marlite paneling. The pressure sensitive labels, available on rolls, are designed to fit a special dispenser for easy application.

Beautiful • Durable • Easy-To-Clean
Marlite®
PLASTIC SURFACES
Heat-resistant melamine plastic finish unharmed by alcohol, juices, boiling water. Takes years of wear, minutes of care!
Remove label with lighter or cleaning fluid

SOUTHERN SCREW CO., Statesville, N.C., recently awarded service pins to approximately 400 employees for five years continuous service.

TO PAGE 78

two new reasons why you should specify

BURKART FOAM

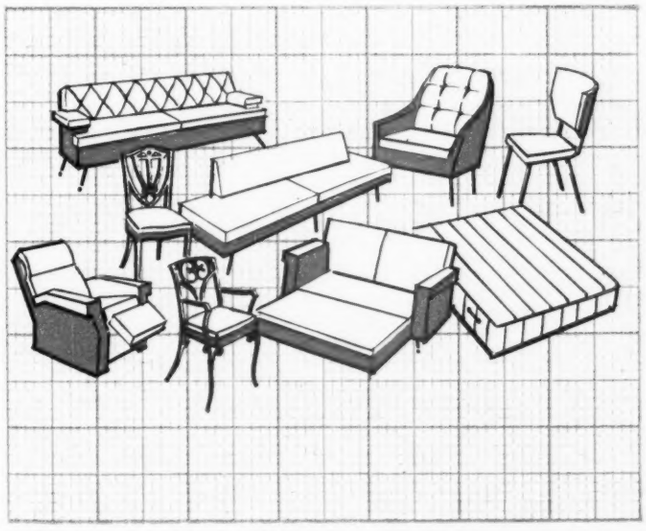
1 direct factory shipment guarantees your receiving first quality Burkart Foam

2 Burkart Foam can now be fabricated to your specifications

Now Burkart Foam saves you even more time — more money by reducing handling time and further lowering your production costs.

Let Burkart help you get foam of the precise density and resiliency you require—foam you **know** is exactly right for your needs. Your order is tailored for your product from a formulation compounded specifically for the furniture, upholstery and bedding industries. You receive foam of uniform quality already cut, already trimmed—ready for immediate use. No waste . . . no costly rejects . . . no extra charges. You get the quality, assistance and service you'd expect from insulating and cushioning specialists with more than 80 years' experience.

Write us for additional information. Quotations and specific details will be forwarded on request. Or, if you prefer, we will be happy to have one of our skilled specialists call on you.



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Reasons Why Burkart Foam Gives You the Best Insulating-Cushioning Job Every Time!

• Improved Cushioning Qualities • Minimum Compression Set • Uniform Density Throughout • Completely Hygenic and Non-Allergic • Resists Mildew, Moths, Molds and Other Pests • Not Affected by Cleaning Solvents and Detergents • Never Becomes Uncomfortably Warm • Non-Skid Surface Prevents Fabric Shift • Performs Well at Any Temperature • Can be Tacked, Sewed, or Hog-ringed • Will Not Disintegrate

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BURKART URETHANE FOAM

FOR DATA CIRCLE FDM NO. 1856

INGENIOUS DESIGNS FLOURISH IN ITALY

LEG CONSTRUCTION shows inventive approach in circular table produced by La Permanete Mobili, Cantù, Italy. Laminated elm is used for base cross members.

Furniture making in Italy is generally a small plant affair where woodworkers in cabinet shop-sized factories follow the ancient traditions of handicraft with considerable manual work. A few mass-production plants have also been in operation in the country, but the majority of furniture producers are small.

This peculiar set up, even though adversely affected by the widely different types and styles of articles produced, takes advantage of the craftsmen's ingenuity, which actively promotes the creation of high quality articles thanks to the inventive power which characterizes all handicraft activities.

The disadvantages of low production rates and the higher costs of small-plant methods, are partially offset by more uniform production through the formation of co-operative and joint ventures in production and distribution.

Also, closer co-operation was asked among designers, architects, interior decorators, and artisans in general, in order to achieve higher production standards, better suited to the requirements of consumers.

The result was that furniture manufacture during the past few years made significant progress, mainly because of the continued demand from the domestic market's huge reconstruction, which has characterized Italy's postwar economic and social recovery.

Although no precise data are available as to either the exact number of furniture makers or the actual amount of finished items produced, reliable estimates have set at 20,000 the num-

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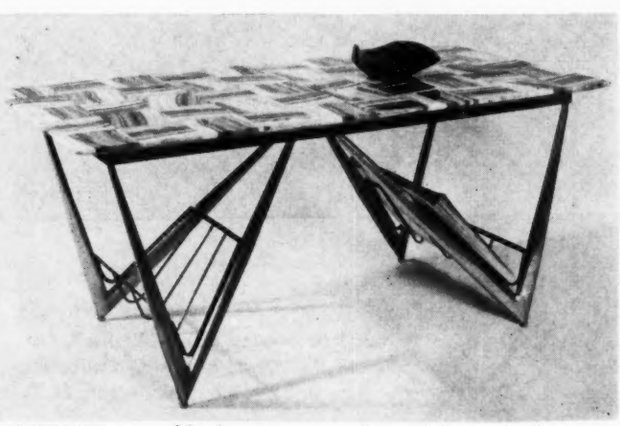
UNIQUE combination playpen and cabinet in teak, designed by Giulio Moscatelli, is produced by Galleria Mobili d'Arte.



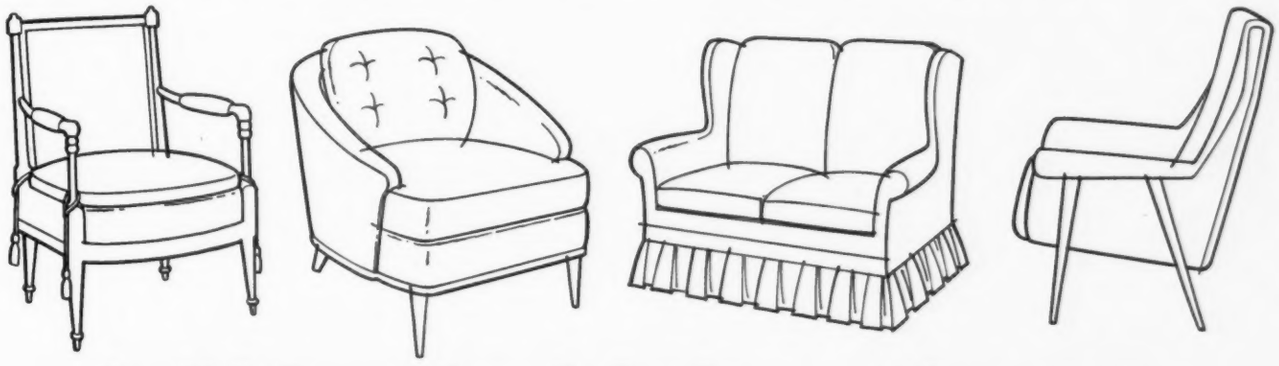
LAMINATE top table features unusual metal legs which serve also as magazine racks. Made by Paolo Salice, Cantù.

Pre-cut net backed insulator pad has firm, true edges . . . resists shredding.

One-piece pad easily handled; installs quickly in deck or back; stays in place.

The Tufflex insulator padding provides firm, uniform support of cushions.

pre-cut Tufflex® insulator pads



build firm, level decks . . . trim costs

Two Tufflex products are specifically engineered for deck pads behind loose seat and back cushions . . . ¾" Tufflex cushioning with cotton net backer and ½" cushioning with rubberized backer. Pre-cut to size, Tufflex pads provide a ready-made cushion-insulator that fits perfectly . . . stays trim and level.

Firmly bonded to the net backings, Tufflex cushioning is always uniform . . . won't shift, sag or bunch. Upholstered pieces keep their crisp, clean lines after long years of hard use.

Raymond Loewy in his new "Idea Chairs" booklet says, "Tufflex upholstery padding is ideal for cushioning furniture with crisp, sculptured lines. It maintains desired shapes and contours without compacting, shifting or breaking apart under pressure."

Write for this booklet and the Furniture Designers Kit to learn how you can gain customer appeal and added profits for your line. Details for producing decks shown also available in a new folder.

TUFFLEX® (all cellulose fiber) CUSHIONING *"with the natural springy fiber"*

WOOD CONVERSION COMPANY, DEPARTMENT 504-61, FIRST NATIONAL BANK BUILDING, ST. PAUL 1, MINNESOTA

FOR DATA CIRCLE FDM NO. 1915

Finish is the Most Important Design Ingredient

Charles Horton, FDM Designer of the Month, emphasizes wood finishes as his key to successful design/ By CAROLYN KNUEMANN

"THE MOST important ingredient in designing is to develop a desirable finish," according to Charles Horton of Statesville, N. C.

This free-lance designer—self-styled a "lone wolf" and "the poor man's friend"—has managed to use finishes advantageously to help produce five successful collections for one of his clients, Williams Furniture Corp. of Sumter, S. C. The latest of these offerings, as of Feb. 1961, is Village Square, an Early American 71-piece oak collection with a hand-burnished, satin, honey-color finish termed "top secret."

Developing a finish—considered by Horton to be his *forté*—is usually the second step as he moves towards a new collection. He says: "This is the way I like to work:

"Select a wood that is available, that will sell in volume rather than a source product that is rare; determine the finish; select the hardware; then start designing."

Style? "It must be compatible with

TO PAGE 28

CASUAL OAK dining group, seen on facing page, is part of the 55-piece Transitional collection by Charles Horton. Designer Horton, left, recently designed the Village Square collection for Williams Furniture Corp., Sumter, S.C. Extreme top, Horton's Provincial Oak collection illustrates how his deft touch can convey a light and decorative quality in French Provincial. Selections from his Village Square group are seen, above, in a princess cap bed and, lower left, in a series of chests and hutches combining eight hardwoods.

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FOR DATA CIRCLE FDM NO. 1908

FDM

DESIGNING WITH WOOD

BY R. D. BEHM

The growing importance of strongly figured woods in furniture design was seen at the Spring Southern Market.

Some manufacturers used contrastive rosewood. There were more showing teak and a New Guinea wood labeled as papuan. Butternut and avodire were used lavishly and as accent woods. The use of burls is also expanding with current emphasis on maple, Carpathian elm, amboyna, olive, walnut thuya and myrtle for decorative contrast.

Even in the big four woods of walnut, cherry, mahogany and maple, the demand for contrastive and elegant figure was noted. Special cutting techniques have been adopted by some American walnut producers to achieve more contrastive and wild-heart figure—yet a few short years ago this particular figure was a definite inventory problem.

Will this cycle of more prominent figure in wood continue in the usual pattern for 15 or more years or will it crest and return to the pencil walnut, rift oak and ribbon mahogany of six short years ago? These are specific concerns of the designers in wood and many point to the June market where more accurate tabulations are possible and the trend shown in North Carolina can be verified.

The selection of the particular woods to be combined requires special consideration of the mood which the particular figure develops when finished. It usually calls for special staining or finishing techniques. To understand these problems a general knowledge of the specie and growth characteristics which cause beauty and variety in wood is most helpful. Often the veneer supplier can assist the designer in searching out the special character in a selected wood to carry out the "mood" or the "feeling" of the furniture.

The most important factor affecting the wood veneer's beauty is the pattern of the annular ring growth prominent in woods growing in the temperate climate. Even in the tropics, the grain caused by cycles of fast and slow growing (usually attributed to wet and dry seasons) is most important. The primary difference is that in the temperate zones the ring growth is a measure of the age of the tree, but this does not apply in the tropics.

Environmental circumstances make each tree in each locale different from any other of the same species, but there are certain characteristics of growth—the presence of small knots and bud ends—which classify the resultant veneer in certain families or types. Mineral deposits and resin composition of the soil also alter or accent the annual ring growth. The size of the tree and the rapidity of growth have their effect in determining the manner of cutting and the boldness of the figure. Fortunately, the faster growing hardwoods still retain their strength properties which is not always true with softwoods.

A second factor in wood figure is caused by the wood rays, some of which actually extend almost from the heart to the bark. These are shown in the wood cell enlargement and will be fully described later. These are most noticeable in the ring porous woods such as oak, ash, hackberry, beach and pecan and appear as "flake" especially when woods are cut "on the quarter" from the bark to the heart. The wood rays and medullary rays are food storage cells growing perpendicular to the wood fibers. The wood ray characteristics are not as popular today as they were in the late thirties and 20 years later in the "limed-oak" cycle of blond finishes. Today the ring porous woods are usually flat cut to show the ring growth and minimize the wood ray pattern. In the semi-ring-porous woods of walnut and cherry the wood rays are not visible to the naked eye and in birch and maple are so small as to be invisible.

Some of the environmental circumstances which cause figure still baffle the experts as in the case of birds-eye maple. The log buyers, however who

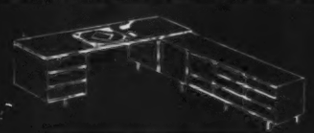
TO PAGE 22

FOR DATA CIRCLE FDM NO. 1871 →

WHEN YOU TALK BEAUTY AND DURABILITY FIBERESIN SPEAKS YOUR LANGUAGE

You have only to look at furniture built with solid **Fiberesin** to notice its inherent beauty; the surfaces are flat and ripple-free, and the finish is satiny-smooth with a warm-to-the-touch feeling. You choose from the widest selection of wood grains, patterns, and colors available to meet any decorative or aesthetic requirement – antique Provincial to bold Contemporary. With this beauty is built-in **Fiberesin*** durability. **Fiberesin** is virtually "people-proof". Its surface cannot be ringed by a wet glass or even a piping hot cup of coffee. A forgotten cigarette cannot harm the **Fiberesin** surface, nor can fruit acids, alcohol, grease, cosmetics, or fingernail polish and remover. **Fiberesin** withstands an amazing amount of abrasion and will absorb bumps and knocks that would destroy other materials. A **Fiberesin** panel will not warp or twist – cannot separate or sliver.

Whatever your furniture requirements . . . hotel, motel, institutional, dormitory, classroom, home or office, we suggest you consider and specify solid **Fiberesin** . . . the structural plastic panel that speaks your language.



DEVELOPED AND PIONEERED BY

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*Fiberesin meets or exceeds all pertinent commercial standards for melamine high pressure decorative laminates. Fiberesin meets all specifications and requirements of Federal Specification L-T-0041c (GSA-FSS) Type III.

DESIGNING WITH WOOD
FROM PAGE 20

comb the countryside for special logs can detect the presence of some of special figure characteristics in the living tree. Others are noted in the concentration log yards. Here the presence of fiddle back, mottle, ripple, angels step and other exotic sounding veneer figure types immediately raise the value and cost of the veneer log. One major manufacturer reports that a single walnut tree produced 17,000 sq. ft. of beautiful veneer, cross figured from edge to edge and end to end. Some of the sheets were as wide as thirty two inches. The veneer was held for several years for a spectacular job in the Mellon National Bank in the U. S. Steel Building in Pittsburgh, Pennsylvania. Under a microscope, the growth characteristics which made this tree so valuable are easy to identify.

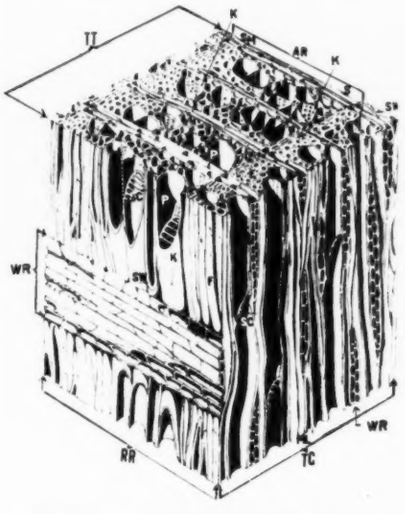
The small hardwood section 1/32 in. high was drawn by the Forest Products Laboratory of the U. S. Department of Agriculture to show wood cell structure. Obviously the microscope could not bring all three planes into sharp focus at the same time so the composite drawing was made of the analysis of various thin sections.

The horizontal plane TT of the block corresponds to a minute section of the top surface of a trunk or log end. It is the pattern formed by the end pores of the ring growth which add such striking character as fiddleback, cross fire, etc.

The vertical plane RR to the left corresponds to a surface cut parallel to the radius—in the trade this type of figure would be called quartered when cut on a slicer. A slight variation cut from the bark to the heart on a rotary lathe is called rift cut.

The vertical plane TG to the right of the illustration corresponds to a surface cut at right angles to the radius or tangentially within the log. This plane is represented in the flat cut figure which is most popular today representing almost 80 per cent of the furniture veneers. The hardwoods have specialized vessels or pores (marked P on the illustration) for conducting sap in contrast to the softwoods in which the sap is transferred through the tracheids. The vessels are made up of relatively large cells with open ends set one above the other and continuing as open passages for relatively long distances. In the heartwood and inner-sapwood of many hardwoods the pores are filled with a froth-like growth (typoses) from the

Cell Structure of Hardwoods Section 1/32 in. high showing end radical and tangential surfaces.



P—Pores. F—Wood Fibres. WR—Wood Ray Cells. AR—Annular Rings. S—Spring Wood. SM—Summer Wood.

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Modern, low cost heavy-duty legs to enhance the appearance of almost any piece of furniture. Delta's unique construction makes the whole leg one unit for extraordinary strength. Smooth, lustrous surfaces stay fresh and new-looking—can't chip, scuff or split. The most durable, rugged leg made. Available in the size, color and style you want . . . at surprisingly low cost. Bolt through construction that is guaranteed against breakage.

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MOLDED DRAWERS

Upgrade your furniture the easy way—simply add these smooth, functional drawers from Delta at less than the cost of wood. One-piece construction is extra strong, easy to clean, won't swell or rot. Ideal for any small drawer application, install them for front or side pull-out. 12" x 8" x 2" or 8" x 12" x 2" in size.

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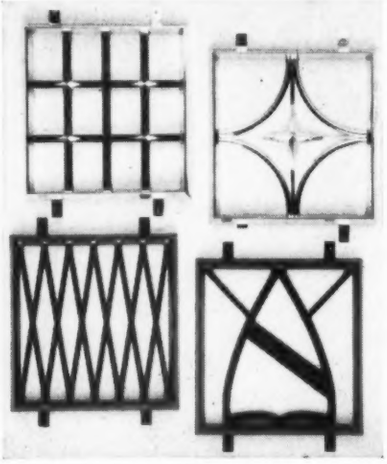
FURNITURE DIVIDERS

A new flair to brighten your line . . . make styling changes at extremely low cost. These new Delta dividers are of high-impact polystyrene for TV cabinets, tables, stereo, headboards, chests and wherever decorative accents are desired. Tack-in corners on the 6" squares fit snug, for quick installation. In brilliant metallic or soft natural wood finishes.

All Delwood products are molded of hi-impact polystyrene and are available in wood grain or plain finishes.



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FOR DATA CIRCLE FDM NO. 1866

neighboring cells.

The pores of hardwood vary considerably in size, being visible without a magnifying glass in some species and not in others. In most hardwoods the ends of the individual cells of the pores are open entirely whereas in others they are partly separated by a grating shown in the drawing as SC. Most of the smaller cells seen in the cross section of the drawing are wood fibers which are the strength-giving elements of hardwoods. They usually have small cavities and relatively thick walls. Thin places or pits (K) in the walls of the wood fibers and vessels afford means for the passage of sap from one cavity to another. The wood rays (WR) are strips of short horizontal cells that extend in a radial direction and serve to store food and distribute it horizontally. In the drawing most of the ray cells shown on the surface (TG) are pictured as being two cells wide but the width varies in different species from one to 50 cells.

In woods of the temperate climate, the growth of one year (AR) is commonly known as the annual ring. It is usually sharply defined from that of the previous or following year. As a rule, the wood formed in the spring (S) called springwood is more porous and has larger fibers than that formed later in the year marked (SM) and called summerwood.

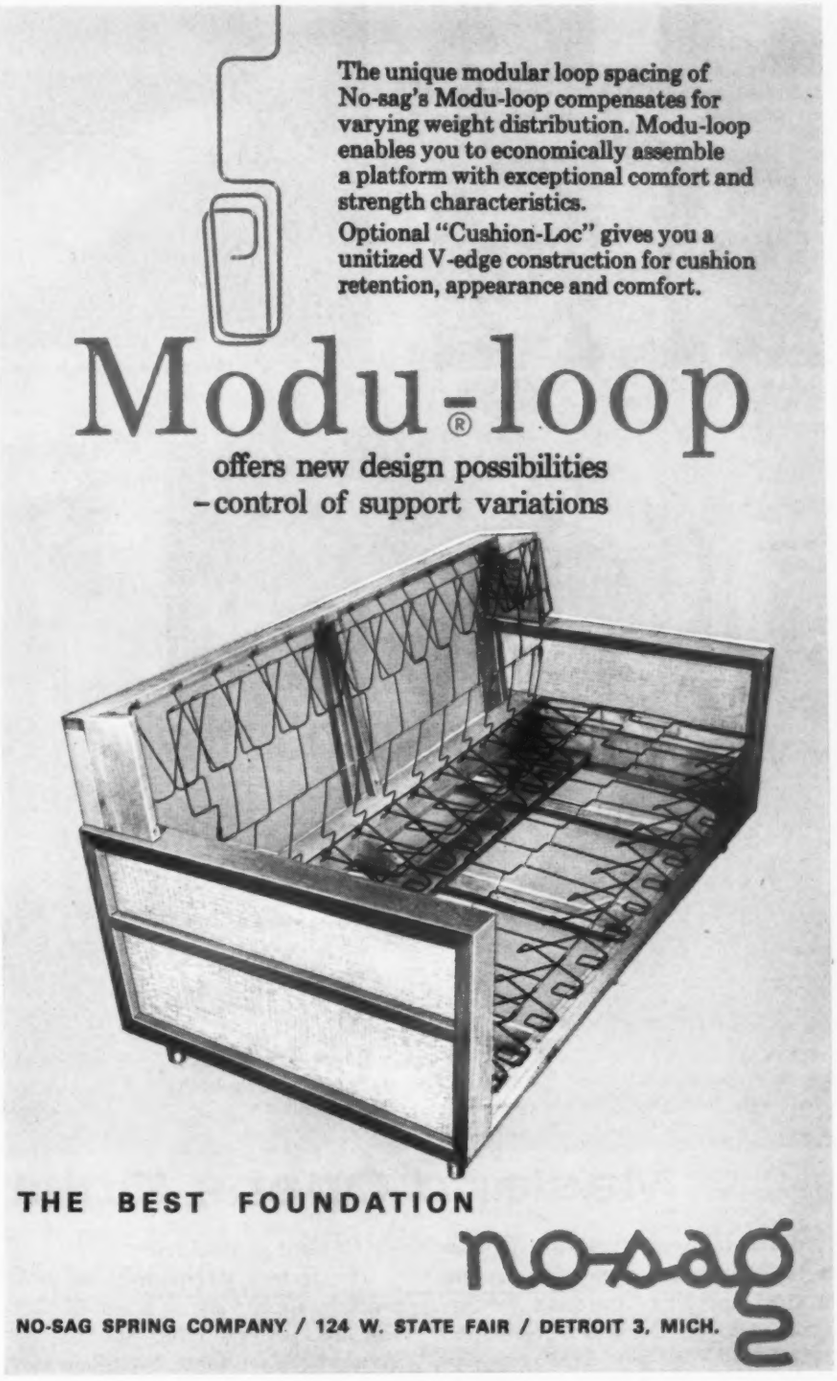
All the cells in wood, including pores, fibers, ray cells, etc., are firmly cemented together by a thin layer marked (ML) and known as the middle lamella. This layer can be dissolved by certain chemicals thus permitting the fibers to be separated as is done in making paper.

As we describe the particular wood species we will show how the individual cell structure effects the character of the figure, but it might be of special interest in view of the wide use of burls to describe how their character varies for the regular tree trunk. Burls are tumor-like growths appearing on some trees. Experts tell us they are caused by certain damage areas which the cells try to seal and cure. The resultant ring-growth figure patterns is a succession of intricate waves, bud ends, and delicate swirls. Some burls are figuratively worth their weight in gold and when cut even a post card size piece is saved for inlays. A few burls achieve a size as large as a desk, but most are much smaller and irregular so extreme care is needed in cutting and matching.

Another special figure type is called "crotch" as the wood block is cut at the confluence of a major limb with the trunk of the tree. Here the ring growth forms a plume-like pattern when flat cut. The outer veneers from the same block are the source for fascinating swirl figure which is highly prized for accent doors and case pieces. The use of stump logs of walnut was very popular twenty years ago and the butt log today is increasingly in demand. We doubt that the extravagant method of digging up the old stumps will ever be revived however not just because of the expense but also because the logging methods now cut closer to the ground and there isn't much left to work with. We will cover this more thoroughly when we trace the trend in figure in walnut in the next article.

"Why worry how veneers are cut?" asked a young designer, "All I have to do is pick out the figure I want from the samples." And he is right, in most instances, but this same person,

TO PAGE 80


The unique modular loop spacing of No-sag's Modu-loop compensates for varying weight distribution. Modu-loop enables you to economically assemble a platform with exceptional comfort and strength characteristics.
Optional "Cushion-Loc" gives you a unitized V-edge construction for cushion retention, appearance and comfort.
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FOR DATA CIRCLE FDM NO. 1893

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J. Ardell Shadle
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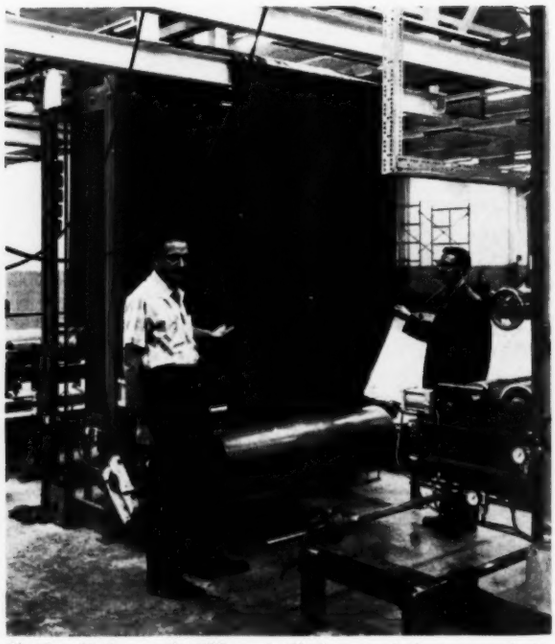
Ernest F. Wuest
Vice Pres., Mfg.

Charles E. McCoy
Mgr., Mocksville Plant

New Masland Duraleather plant at Mocksville, N. C.

William C. Gardiner, laboratory supervisor, and William J. Clark, Mocksville sales, inspect testing equipment at the plant lab.



Charles McCoy and William J. Clark pose before one of the vinyl upholstery processing machines.

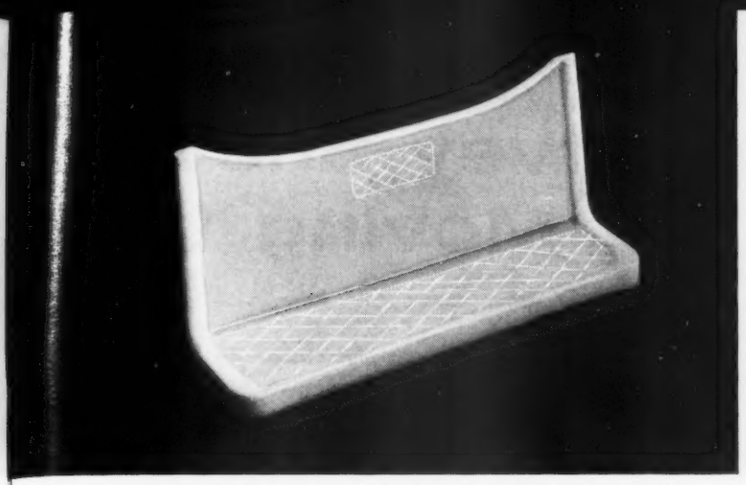
Masland Opens Finishing Plant

Masland Duraleather Co., pioneer in the development and manufacture of vinyl upholstery materials for furniture and related products, continued its expansion of productive capacity with the opening of a new 140,000 sq. ft. plant at Mocksville, N. C.

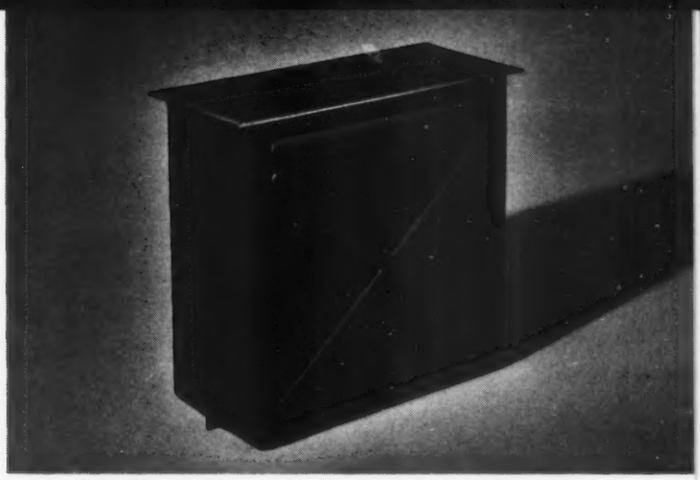
The factory is equipped to print, emboss, apply various kinds of backing and perform other finishing operations. Space for a 2½ million yard inventory is provided.

A unique feature of the factory is that it is cooled and heated by heat pump equipment, the first of its type to be used in the United States.

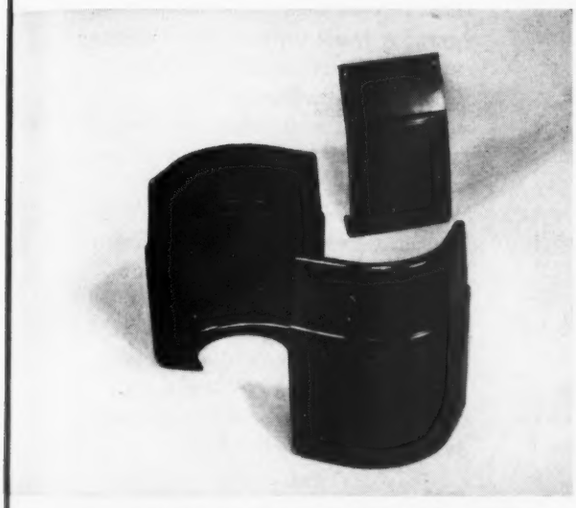
Headquarters for the company is at Philadelphia, Pa.—*R. A. Helmers.*



FOOT REST—Attractively molded high chair foot rest by Joseph P. Miller, Inc., has permanent color and finish . . . won't crack or splinter . . . hard, easy-to-clean surface.



RECORD STORAGE WELL—For Zenith High Fidelity Stereophonic Instruments—lightweight, functional, and longer lasting . . . ready to install as is, without finishing.



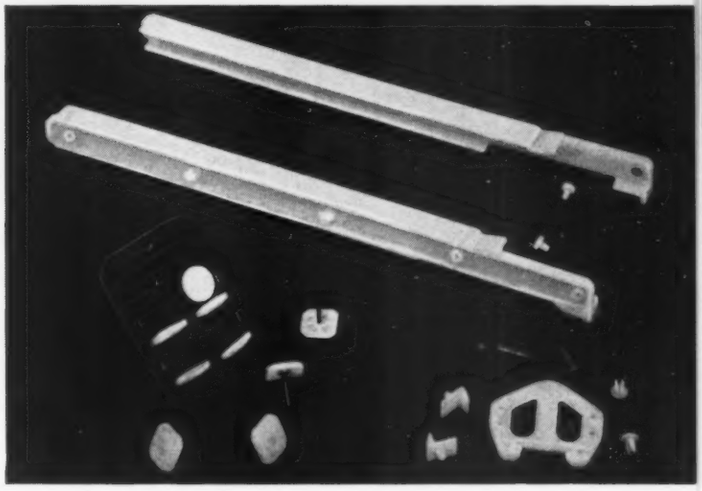
BILLIARD TABLE PARTS—Functionally styled with integral color and texture for Superior Industries Corp., N.Y.C. Because of MARLEX, these parts won't chip, dent, warp or crack.

MARLEX* furniture components improve product quality

To improve products and keep costs down, more and more furniture manufacturers rely on components molded or formed from MARLEX high density plastics. These high-quality plastics are lightweight, tough, and virtually indestructible . . . resistant to denting, cracking, acids, alkalies, greases, fungi, corrosion . . . and possess a wide usable temperature range (—180°F to 250°F). Components of MARLEX can be molded, thermoformed, extruded, welded, machined, printed upon . . . never need refinishing.

*MARLEX is a trademark for Phillips family of olefin polymers.

HIGH CHAIR TRAY—This tray from Napco Plastics is sturdy and rugged. Smooth, hard MARLEX surface is non-absorbent, non-allergenic, easy to keep clean.



SMALL COMPONENTS—Self-lubricating drawer slides, non-marring furniture glides, and tough dowel pins—examples of low-cost, better performing MARLEX furniture parts.

For more information, see your plastic fabricator, or contact us.

PHILLIPS CHEMICAL COMPANY

Bartlesville, Oklahoma

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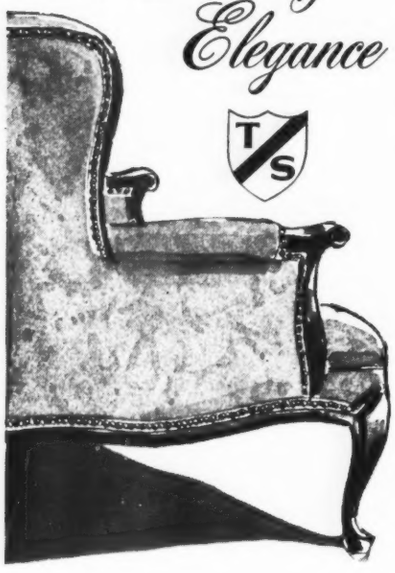
FOR DATA CIRCLE FDM NO. 1896

PHILLIPS 66 MARLEX PLASTICS

A Touch of Elegance



A beautiful chair made even more beautiful by just the right upholstery nails. Whether it's French Provincial or hundreds of other furniture styles and periods, you'll find there's a Turner & Seymour upholstery nail for you. Or get a custom-made nail to your individual specifications.

A complete selection of sizes and finishes T&S upholstery nails are available in brass, steel, leather-like, plain and fancy heads.

Furniture Glides

Stainless steel glides (durable and non-rusting), both single and 3 prong are available in all popular sizes. The complete T&S line includes swivel glides, rubber insulated, drawer, and hardened and non-hardened single and 3 prong glides.

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THE TURNER & SEYMOUR MFG. CO.

TORRINGTON, CONNECTICUT

FOR DATA CIRCLE FDM NO. 1911

Style Survey Shows Colonial Moving Up

With Summer Markets on the horizon, furniture manufacturers and dealers are analyzing current consumer buying trends. Though impossible to predict with any strong accuracy, the results of "guesstimations" often parallel actual buying.

Consumer furniture selection at retail levels was recently surveyed by the Gilbert Spruance Co., Philadelphia, leading producer of finishes. This study is the result of depth interviews conducted by survey teams with store buyers and merchandise managers in over 25 department and furniture stores nationwide. Of the merchandise managers and buyers interviewed in the Far West, 85.7 per cent attended the latest Los Angeles and San Francisco Furniture Markets. In the East and Midwest, 73.3 per cent attended the January Furniture Market in Chicago. As a result, the observations in this survey were based on what they saw and learned at Markets, as well as on the customer interest and reactions to various furniture styles and finishes in their own stores.

The survey results were:

Style

On the national scene Colonial is indicated as the most important style factor. While the Provincials have gained some importance, Danish and Swedish have fallen off. The Oriental trend, reported as an increased sales potential in 1959, is currently standing still rather than gaining in acceptance.

EAST—Here, Early American and Colonial are the strong leaders with no real competition except for French Provincial which is slowly regaining ground. Oriental is still a minor factor in this area.

MIDWEST—The trend is also for Colonial and Early American but French and Italian Provincial are beginning to compete strongly for leadership.

WEST—In this section, Italian Provincial is a weak leader while the big Danish trend has slowed down even more.

Colors of Finish

National preference for natural and stained colors continues with greatest interest in medium to light brown tones and an occasional mention of mahogany. Soft brown and antique white dominate the color scene though greens and black are favored with nods of approval.

EAST—This area is typical of the growing trend toward lighter colors in natural and stained wood tones. Other color preference shows white on French Provincial as the leader and occasional use of reds, greens and black.

MIDWEST—The emphasis is on brown, warm tones in a medium to light range with an occasional mention of gold trim.

WEST—Here, dark finishes on walnut, ash or mahogany are preferred, and in many cases, slightly distressed. Antique white is gaining in color acceptance.

Types of Finish

Semi-Gloss is by far number one in popularity and the oil finish strongest in this category. Dull paint finishes are prevalent for the Provincials. There is some mention of high gloss, and contrary to past indications, is not classified in relation to price.

EAST—The major trend continues in favor of semi-gloss but some indications show a greater acceptance of high gloss. Paints and oils are used on a small scale, but there were no comments on oil being out as predicted last year.

MIDWEST—This area represents a reversal since last year. There is little talk of protective and lacquer finishes but definite use of oil and stain and the distressed, rough and matte finishes.

WEST—Oil is in strong use and painted finishes are coming up. As of yet, nothing has come of last year's mention of new dull or matte finishes.

Woods

Cherry is leading, use of mahogany is increasing and interest continues in walnut, pine, maple and birch. Teak

and oak represent a regional interest, as do contrasting inlays.

EAST—Interest in walnut and pine continues but cherry is the strong leader.

MIDWEST—Cherry is first, with walnut a strong second. There is also a minor interest in mahogany and maple.

WEST – Walnut leads here, followed by mahogany, teak and oak.

Special Trends

Painted, solid color accent pieces are a definite trend, but the acceptance is not as broad as last year. The interview revealed that most of the merchandise managers and buyers that were positive, were emphatically so; but, they only accounted for 72 per cent. The most significant factor in this trend is the recognition of the opportunity the color accent pieces permit in expanding sales.

Distribution of Color Preference

EAST—Black, white and red are the most popular colors. Those with lesser use cover the rainbow.

MIDWEST – Black, green and white tie for first. Orange, gray, and a combined use of white and gold are next in importance.

WEST—White is tops, followed closely by green, gold, blue and a wide range of pastels.

Predicted Styles

Nationally, the situation is extremely indecisive. Beyond indicating the prevalence of Early American and Colonial in the East and Midwest, only French and Italian Provincial are assumed to continue at the present pace. Hesitancy underlined the relative importance of other styles and influences.

EAST—Early American and Colonial are expected to hold the field. Italian Provincial and contemporary will contend for second place.

MIDWEST—French Provincial will lead, followed by modern, Early American and contemporized traditional and transistional styles.

WEST—Modern and contemporary will show up as weak firsts, according to the survey, while traditional and Danish inspirations are favored for upholstery. ■

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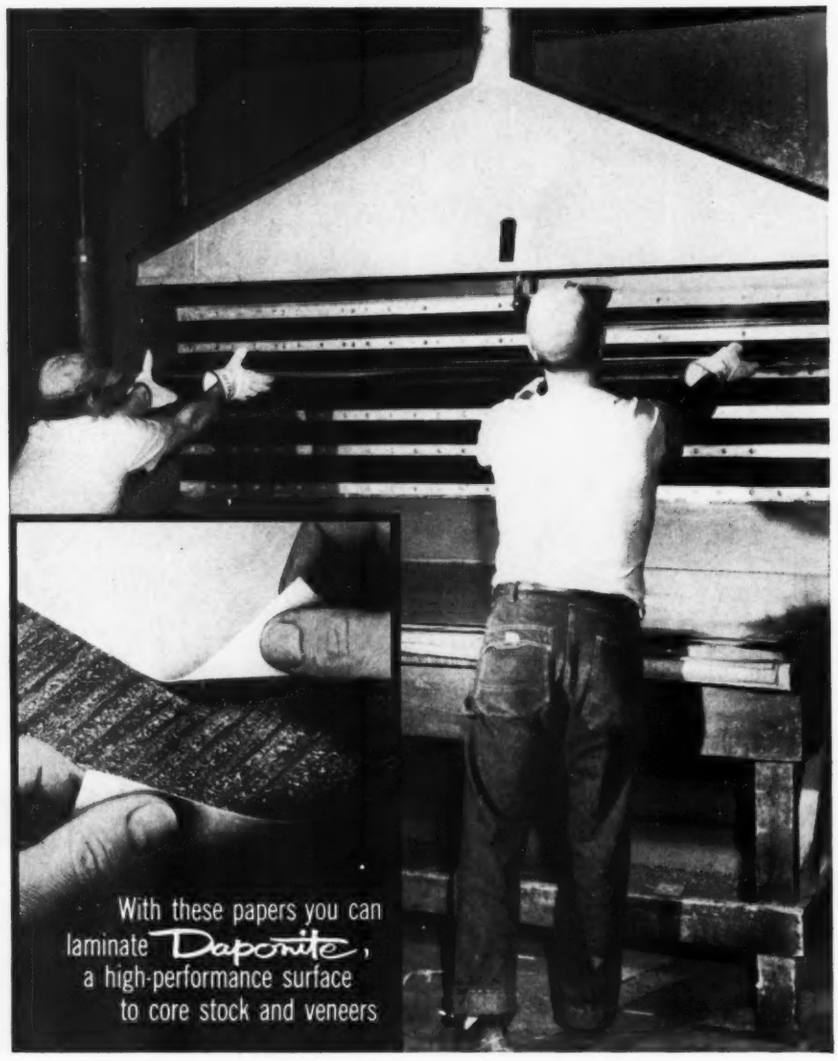

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FINISH IS MOST IMPORTANT
FROM PAGE 19

the individual factory and with the taste of the public."

A key to Village Square? "The time was ripe. Such a presentation was being sought by both consumers and buyers. There was a complete void in the industry for an Early American collection in the low-medium price bracket. Village Square is within the grasp of every person in America who can own furniture."

Good research had aided with timing the launching of Village Square.

In designing the pieces of a collection, Horton begins with chairs and other seating items. "Although I don't eat the crust of a pie first, I like to do the hardest things first in my work," he explains. Doing a Captain's chair first would be an example.

Next he moves to case pieces. A triple dresser might be on the schedule. Beds follow. Last come occasional pieces.

In woods, Horton prefers solids such as American oak, pine, maple and walnut. He stresses "proper woods for proper uses." For bending, he likes maple and beech. Chair runs might be oak, pecan, maple or beech. Maple and elm are fine for legs. "Solid mahogany isn't necessarily the best wood for chairs," he explodes a popular consumer prestige concept.

Village Square is a combination of eight American hardwoods—red gum, tupelo, pecan, cherry, maple, magnolia, beech and elm, he explains. He based this combination on a bit of history, for the Village Square woods are the same lumbers that itinerant colonial cabinetmakers often found drying in barns. These were the woods available for crafting into furniture for a particular household.

Horton's predilection for oak appears in three earlier Williams collections. Casual Oak—a transitional correlation of 55 pieces for bedroom, living room and dining room—has been declared by Horton to be "America's second-selling collection as of January 1961." It was brought out some years ago. Darlington Oak is an English grouping for bedroom and dining room. Provincial Oak—aimed at a girl's room—was "the first French Provincial that would butt and stack." Explains the designer: "I have three daughters, and I have learned that little girls can be just as rough as

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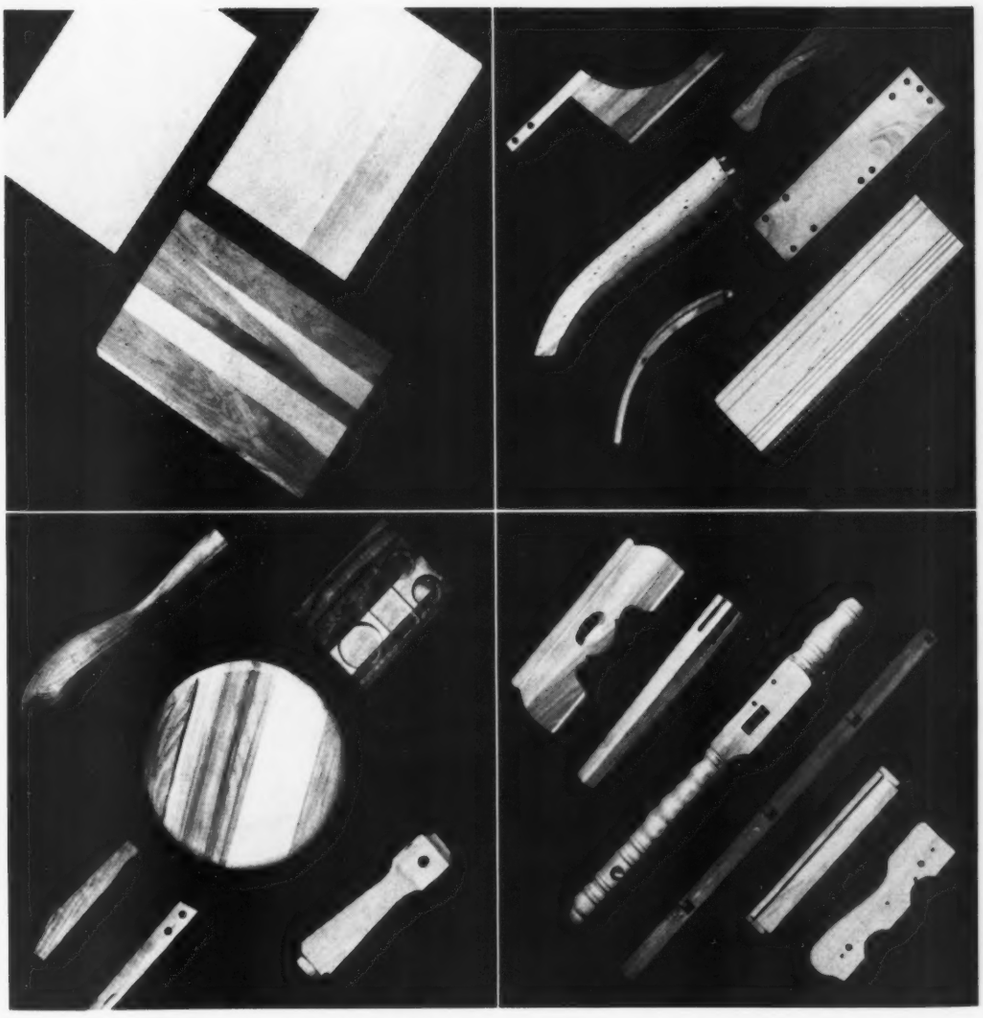
Wood parts supplied by: King Lumber Industries, Inc.; Gamble Bros., Inc.; Roanoke Woodworking Co.; and Carlton Smith Industries, Inc. Photos by R. A. Helmers, Editor.



WENDELL W. McMILLEN, President, McMillen Lumber Products, Co.,

TYPICAL WOOD PARTS, supplied by quality manufacturers of hardwood dimension. Degree of fabrication may vary from rough blanks to completely machined and sanded parts, ready for assembly, depending on customer requirements.

Purchase Certified Wood Parts To Improve Your Profits

By WENDELL W. McMILLEN

As a member of this fine organization known as the Harwood Dimension Manufacturers Association*, I want to impress upon you the important role that we now play and the even more important part that this group of manufacturers will play in the future production of furniture and other allied parts.

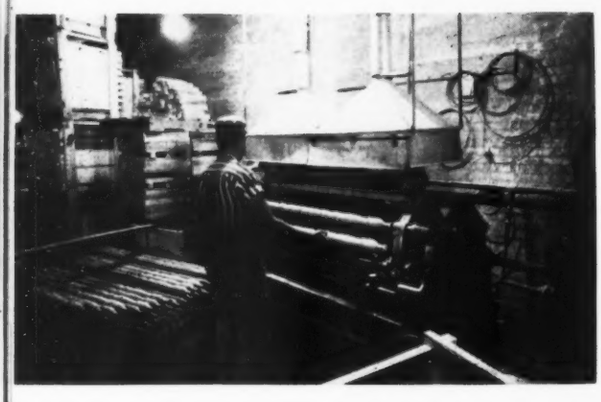
Our members are leading manufacturers of semi-machined and completely machined wood parts. This association was formed many years ago to establish rules and standards of quality manufacture for protection of the wood parts buyer.

As a group, we represent several hundred years of experience and engineering know-how in the processing and manufacture of semi-finished and completely machined hardwood parts. Our combined investment represents several million dollars in modern plants, machinery, tools and equipment. Our kiln drying capacity runs well in excess of 50 million board feet of lumber per month. Without exception each of us is located in areas of abundant supplies of hardwood timber. Many of us operate our own sawmills and some cut from their own forests on a selective cutting basis. We are an industry that is well financed, well equipped with the latest and most modern machinery and equipment, staffed with highly competent personnel, located close to our sources of raw material, and we have a great desire to help you produce a better product at a lower cost.

Several years ago, the members of the Hardwood Dimension Manufacturers Association embarked upon a program of education designed to erase the reputation for mediocre quality and uncertain delivery that had been built up in the minds of many users of "purchased" parts. These ideas had been caused by a

TO PAGE 30

**Hardwood Dimension Manufaacturers Association is located at 3813 Hillsboro Road, Nashville 12, Tenn.*



MODERN MACHINERY, plants and equipment are maintained by Hardwood Dimension Manufacturers, according to author. Clockwise, starting at top, are: dry kiln facilities (HDMA members are equipped to season over 50 million board feet per month); modern unstacker and cut-off saws; multiple drum sander; electronic gluer; lathe; and inspection of finished parts. All photos were taken in HDMA member plants.

multitude of saw mills and planing mills who advertise themselves as "dimension" mills, yet have no conception of the quality and precision work required by furniture manufacturers.

First of all, HDMA members decided that they must be certain that their own house "was in order." To accomplish this, a series of "Plant Inspection Tours" was planned whereby there would be a free exchange of production ideas and techniques among HDMA members. On these tours, executive and technical people from member companies congregate at a specified place and travel by chartered busses to visit two to five HDMA member plants. In an actual plant visit, top management of the host company instructs all supervisory personnel to answer all questions about any production operations in the plant, yard and kilns. By the free exchange of manufacturing information, a constantly improving industry product is made possible. Costs of precision parts are held to a minimum by free exchange of data on various machines, equipment and techniques.

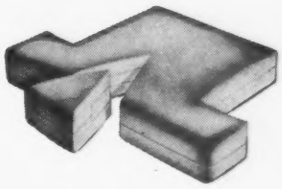
Before a new concern is admitted to membership it must undergo a thorough examination by a commilttee composed of leaders in this field, and also the prospective member's plant is inspected for type of machinery and equipment, tooling, inspection methods, handling of materials, dry kilns and manufacturing know-how to produce wood parts up to HDMA standards. After admission he is expected to attend several meetings

TO PAGE 32

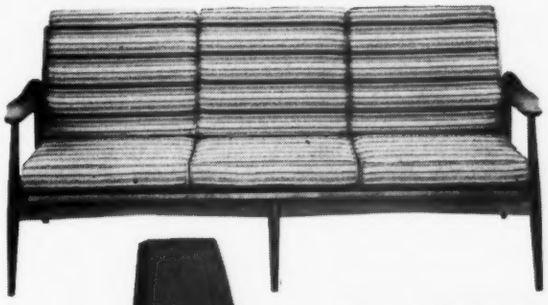
whether you want...

. . . the pleasingly plump look of fully molded cushions

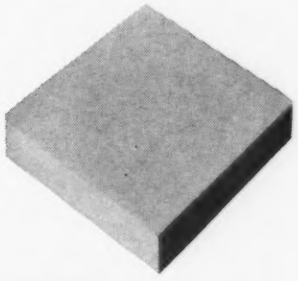
No. 2958 by Baumritter; with fully molded "dual function" urethane foam cushions for maximum support and comfort . . .



. . . the sleek sophistication of the sliced slab treatment

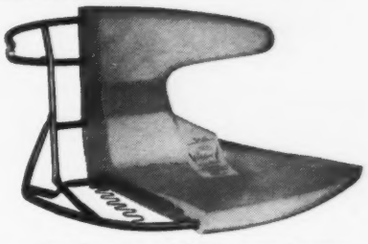


No. A 660-74 by Heywood-Wakefield; cushioned with sliced polyether urethane foam for the crisp, clean look of Modern . . .



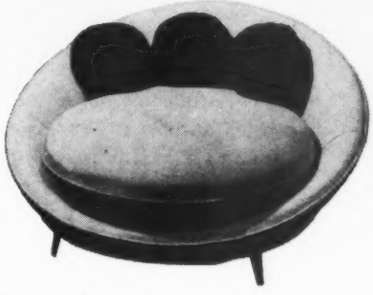
. . . the vibrant vitality of the new generation

Urethane foam, integrally molded around steel frame construction from Karpen* Furniture's Chair Foam Collection . . .

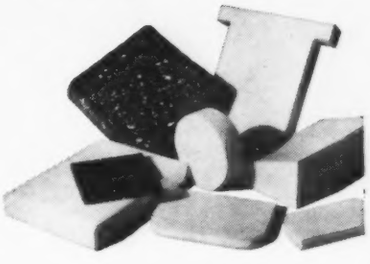


Chair-Foam Patent 2838100, Karpen Furniture

. . . or a space couch for astronaut homebodies



See the free-flowing design of the Late Today or Early Tomorrow periods from the Cuddle Chaise Lounge series, J. L. Chase Chairs*



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First in Urethane Chemistry

*Divisions of Schnadig Corporation

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FOR DATA CIRCLE FDM NO. 1888

CERTIFIED WOOD PARTS
FROM PAGE 30

each year where the latest manufacturing methods, quality control, production methods, etc., are discussed. His plant must be re-inspected each year by a qualified inspector of the Association. This step is to make sure that his facilities have been kept up-to-date and that his inspection methods have not deteriorated.

Only HDMA members are qualified to ship certified HDMA parts. These wood parts, either in semi-machined or completely machined form, are guaranteed by the producer as to quality, precision, and moisture content. Each shipment of Certified HDMA Wood Parts is accompanied by a "Certificate of Origin" from the producer which reads, "These Hardwood parts have been manufactured by a member of the Hardwood Dimension Manufacturers Association and are guaranteed to conform to Commercial Standard CS 60-48 isued by the National Bureau of Standards."

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FOR DATA CIRCLE FDM NO. 1881

A furniture manufacturer once stated that well designed furniture was the most important single factor contributing to his success. Merchandising was next on the list, and of course, it goes without saying that you must have a quality product competitively priced. Is it then not more essential to devote more of your time and effort on these two important items that mean so much to the success of your business? We in the Hardwood dimension business do not have to divide our attention between production of wood parts, designing of furniture, carrying out a planned merchandising program, correct packaging, inventory control, and a hundred other items that must be properly executed in order to operate a successful furniture plant.

There is much time consuming detail required in the manufacture of furniture parts. Remember this: Detail and expense starts with the purchasing agent, raw material costs, transportation, waste disposal, factory space, indirect labor, idle machines, and many more items too numerous to mention.

Our whole interest is centered on the production of wood parts. We have only one reason for existence, and that is to supply you with quality wood parts at a fair price. Some of us even go so far as to specialize in certain woods. In our own case we specialize in cherry and maple dimension, solid glued panels matched for color and grain, squares that are made both solid and laminated, as well as moulded and shaped parts. We also make dimension parts from other woods particularly those grown in the Northeastern area. The reason is quite obvious, since we operate our own mills, we can furnish our customers better quality products at a fair price in dimension which we control from the tree to the finished part. In the case of cherry dimension we cut twelve to fifteen lengths at the cut off saw, while the average furniture plant cuts six or seven. Our utilization is naturally greater. Depending on the type of order, we cross-cut, straight line rip, or gang rip. Few furniture plants could spare the room for this diversified rough mill set up. However, this arrangement gives a greater yield on any given order.

A diversified list of customers, some making bed room and dining room furniture requiring relatively long lengths, and others making end tables,

coffee tables and other small items, makes it possible for the dimension manufacturer to cut many more lengths than is practical for an individual furniture plant.

When you put a cutting in the line, it usually runs for a considerable length of time, and only those particular lengths are required in your furniture production. All other lengths must be chopped up and sent to the boiler room.

Reports from men who have traveled all over the world and have seen the most modern woodworking plants, report that everywhere the number one concern is for greater utilization. with the high cost of stumpage, high labor, taxes, etc. the lumber that we all must use will get more expensive.

Members of this Association have streamlined their operations to give you a quality product at mass production prices. Special machines are used to obtain volume production. Some member plants of HDMA specialize in manufacturing glued up panels in certain woods, while others center their main line of production on mouldings, others make turnings, core stock, or drawer sides. Most of the plants make a wide variety of dimension parts, but stress volume on certain items.

Competition is keen among the members and many times those who center their line of production around a given product such as drawer sides, are in a little better position price-wise. If a member of HDMA cannot furnish your inquiry efficiently, he will gladly recommend members who specialize in your particular requirements.

An important factor in "purchased" wood parts is the known raw material cost. To meet the competitive situation which exists today, it is essential that we have an accurate record of our costs. To my personal knowledge, many furniture manufacturers do not maintain a cost system which will accurately reflect their costs. By dealing with a reliable dimension parts manufacturer, a definite raw material cost can be established, thus permitting you to fix a selling price for your finished product with the complete assurance that your costs are pre-determined accurately.

Sometimes cost accounting may appear to be too expensive to determine all of the small costs involved in making dimension parts. For instance, few manufacturers can tell you how much the glue costs for edge gluing 1,000 sq. ft. of dimension, or how much more glue it takes to laminate a post. Your first thought would probably be that glue is a small item in the cost of your manufacturing. In relation to your overall cost you would be correct, but when you take a look at the total cost of glue for a year—is it such a small item? And did you make any allowance when you were figuring your cost of dimension parts?

Do you know the real cost of each part that is manufactured and used in your plant, or do you wait for the profit and loss statement that shows the overall picture of your entire operation. If you do, and if the statement shows a profit, you may be inclined to be satisfied with the results—without knowing which divisions of the business made a profit and which lost money. If the statement reveals a loss it is frequently the natural reaction to "cut costs" by first looking at the merchandising. Advertising expenditures would no doubt be cut. Naturally, lumber being an important

TO PAGE 44

BASSICK GLIDES

...smart footing for smart furniture

Bassick offers furniture manufacturers a complete line of glides for almost every conceivable application. ■ They come to fit wooden furniture legs—socket type or nail type—and round or square metal tubular legs, in a wide variety of sizes. ■ Tilting and non-tilting types are available. ■ Bassick rubber cushion construction subdues noise, stops clatter and chatter. ■ Bassick nylon-base that can't rust, can't corrode, can't stain floors or rugs. ■ Let Bassick quote on your quantity glide orders. Inquiries welcomed.

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A DIVISION OF
STEWART-WARNER CORPORATION

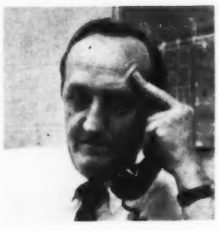
FOR DATA CIRCLE FDM NO. 1853

Simmons Munster Plant Applies Advanced Techniques

By Alfred DeBat, Associate Editor

Plant photography by author.

L. H. WEYROUGH
Central Division Manager



J. R. HOOPER
Plant Manager

MIKE GESSNER
Central Division
Purchasing Manager

For more than 36 years, Simmons Co. has been a leader in bedding manufacturing with its world famous Beautyrest mattresses and Hide-A-Bed sofas. Several months ago the 90-year-old firm completed the most modern plant in its history at Munster, Indiana, which houses its largest soft and hard goods manufacturing divisions, the National Technological Center, and central division executive, accounting and clerical offices.

Here, with the most advanced methods in its 28-acre plant, Simmons continues to create the products which have become household words. The Munster plant, the largest bedding and dual purpose furniture production facility in the world, is one of 28 Simmons manufacturing plants located throughout the United States and overseas.

Other Simmons manufacturing facilities in the United States are located at Columbus and Medina, Ohio; San Francisco and Los Angeles, Calif.; Elizabeth and Union, N.J.; Dallas, Texas; Medford, Mass.; Atlanta, Ga.; and Kansas City, Kan. Last year the sales volume for Simmons total operation reached $126,163,925.

The Munster plant has more than 1,093,000 sq. ft. of covered space where a wide range of sleep products are manufactured by 1,500 employees. The soft goods division produces the Simmons mattresses (Beautyrest, Slumber King,

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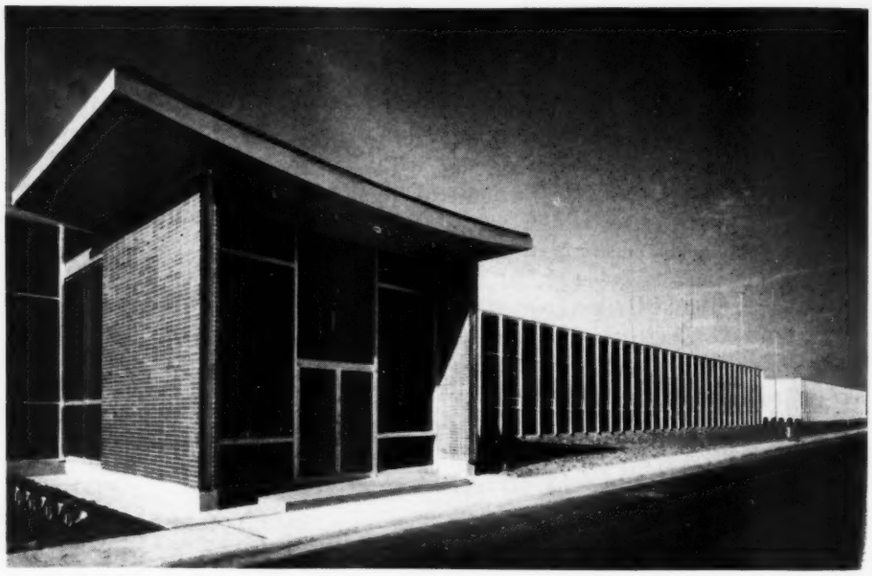

SIMMONS MUNSTER plant entrance, right, shows modern style in architectural photo by Bill Engdahl. On facing page, Hide-A-Bed model is one of the 200 style and color variations offered by Simmons. Top right, Chester Schincke, laboratory supervisor, at plant's National Technological Center, puts mattresses through endurance tests on the Juggernaut machine. Below, workers make final inspections and package Simmon's mattresses.

THE HOUSE OF
SIMMON
THE GREATEST NAME IN SLE

Special Manufacturing Methods Developed At Simmons Newest Factory

and Deepsleep, to mention a few), box springs, Hide-A-Bed sofas, studio couches, lounges and related items. The hard goods division produces hospital beds and metal contract furniture for hotels, motels and dormitories. The contract products include metal tables, chairs, desks and chests, rounding out the sleep products for an entire line of institutional furnishings.

Since much careful, individual workmanship is necessary in many steps of this mass production operation, Simmons engineers report that often standard machines are unable to do the job management requires. The formula is the use of standard machines wherever practical, and otherwise the creation of specially designed machines. The remaining processes are completed by hand.

Most products go through a five-day cycle from raw materials to finished item. More than 2,800 tons of raw materials are used each month to produce approximately 125 tons of finished products per day.

Mattress production begins by processing linters and picker cotton by-products into felt batts for upholstery.

Each month more than 500,000 lbs. are purchased at a cost of $50,000 and delivered to the company in tightly packed bales from sources around the world. It is fed into Simmons garnetting machines, which break the bales and mix the two fibers together, linters for the padding body, pickers for a binder. In several, successive machines the fibers are opened, thoroughly cleaned and

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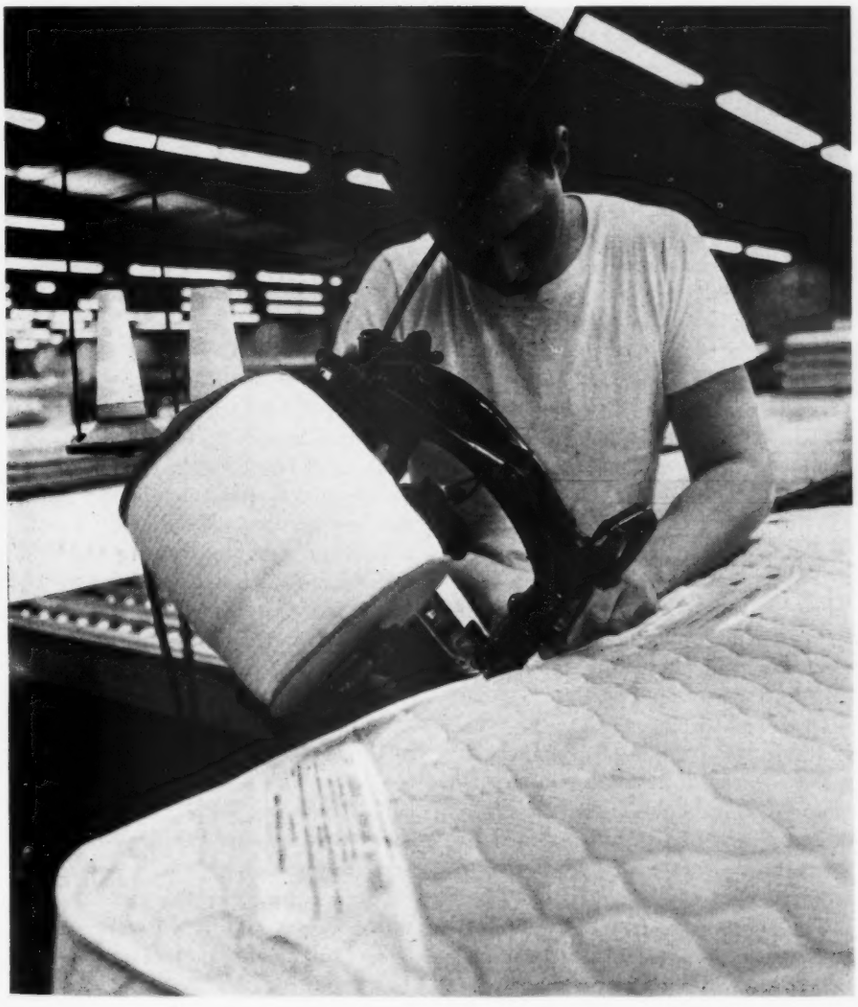
MATTRESS fabrication begins, directly below, with the processing of linters in garnetting machines for padding. Coil springs, extreme bottom, are manufactured from wire automatically. Mattress borders are made in continuous strips combining fabric and padding together.



MATTRESS BORDERS and lining
are first basted by hand, top right.
Mattress is then closed with a specially
designed hand sewing machine which
feeds its own piping, left.
Mattress ticking
and upholstery fabrics are cut and made
ready for stitching, top right. Final step
in mattress production before inspection
is automatic tufting
on certain models, directly above.

HIDE-A-BED arm assemblies await padding and upholstering by worker using Senco nailer, above. Box spring manufacture begins with frame construction – holes are drilled with Greenlee gang borer, top right, and wood frames are nailed on Morgan automatic nailer, lower right.

Power Tools Speed Hide-A-Bed Assembly

blended together until they become a fine down, after which the material is fed into the hoppers of garnet machines made by Proctor and Schwartz Co. and James E. Hunter Co. Here the fibers are pressed into thin, endless sheets and, as the process continues, these are combined with other sheets building up the batt to the correct thickness for mattress padding, which is used for borders, and top and bottom panels.

Borders, the padded surface covering the perimeter of mattresses, are made in continuous lengths by special factory-designed machines, which automatically sew three or four bands of cloth, padding and backing material together. Similarly, padded quilted mattress covers are produced on automatic multi-needled quilting machines made by Pathe Equipment Co., East Patterson, N.J.

Open coil spring mattress cores and Beautyrest serpentine of separate coil springs encased in cloth are manufactured on machines of Simmons own design. In these mattress constructions more than 75,000 pounds, or 567 miles, of steel wire are used daily.

The heart of the famous Beautyrest mattress is cloth-pocketed coil springs, which are free to be individually depressed. These are produced in long continuous muslin tubes in which each spring is separately incased. Workers then wind these lengths of incased springs back and forth in a jig frame, which holds them in the mattress shape. The coils are sewn together on the frame by special six-foot needles, which are part of the jig. After this process, the pocketed spring coils are permanently fixed together in the mattress and go on to be covered by conventional methods.

Spring mattress cores are assembled, then borders—tops and bottoms —are sewn in place by hand. After this, the mattress is closed by a portable hand operated sewing machine of the company's own design, which feeds not only its thread but mattress border piping also.

More than 110,000 yards of mattress ticking, amounting to more than $200,000 worth of goods, is used each month. Another 250,000 yards of greige goods sheeting is also used each month, worth $50,000, reported Mike Gessner, central division manager of purchasing.

After closing, certain models are tufted automatically. Finally, mattresses roll off the production line into

TO PAGE 40

The mainspring of furniture design?
Pirelli Resilient Webbing of course!

says Robert H. Wexler, Executive Vice-President, Selig Manufacturing Co.

"As progressive furniture manufacturers we have got to keep one jump ahead of our competitors. That is why we were one of the first firms in the States to use Pirelli Resilient Webbing on a large scale. Primarily, we were concerned to find a springing material that would give a lifetime of comfort yet allow us to go ahead with a variety of really modern lightweight designs; a springing material that could be fitted easily and quickly, that took up little storeage space and one that would not break or sag, even after years of hard wear. On all these counts Pirelli was our choice. It is a decision we have never regretted."

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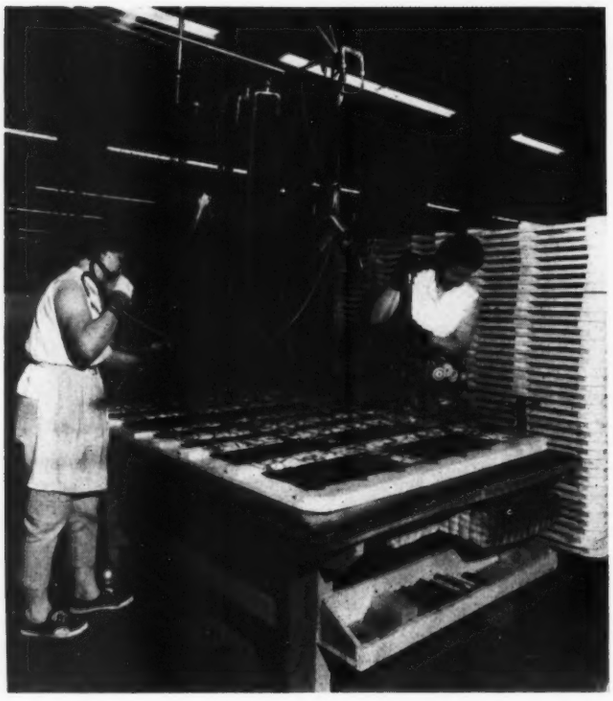

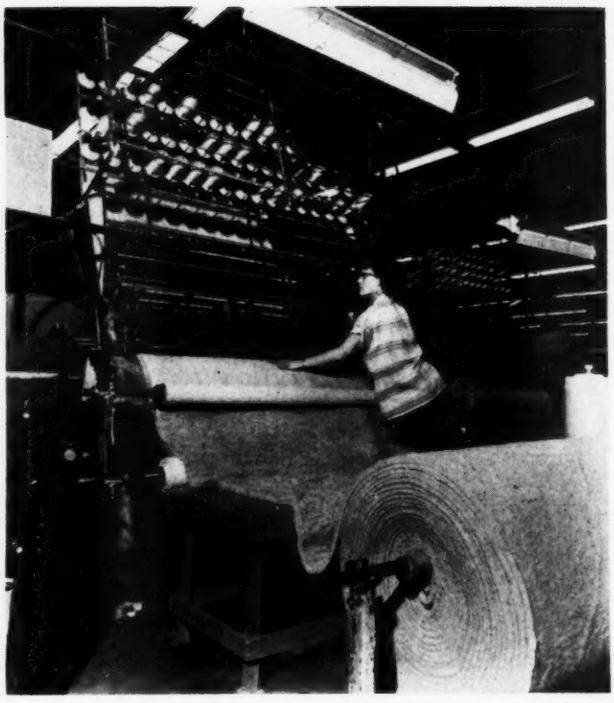

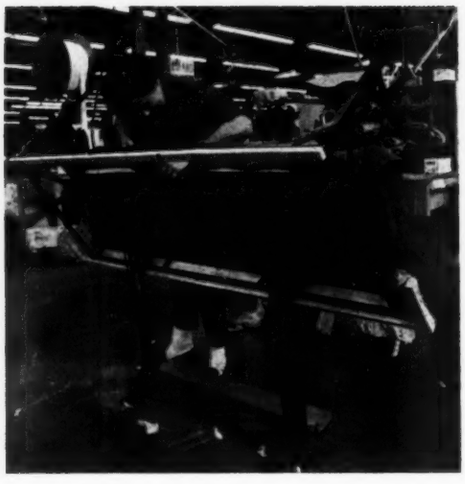

BOX SPRINGS are assembled with Power Line and Thor staplers, top right. Quilting for certain mattress models is done on automatic machines, top left. In Hide-A-Bed Construction, arm units are padded and upholstered separately above, from the main assembly, which is fabricated and upholstered on special rotating jigs, lower right.

Special Equipment & Standard Tools Build Quality

CONTINUED FROM PAGE 38

kraft paper bags or cartons ready for shipment.

Box springs are similarly produced. Each month, five freight carloads of eastern Canadian spruce lumber are used to construct box spring frames. The wood is selected because of its strength, small number of knots, little twisting and a superior nailability.

The company's small woodshop is concerned mainly with box spring frame building. Tannewitz band saws and DeWalt cutoff saws are used. The completed frames are nailed with a Morgan Machine Co. automatic nailer, and hardware holes drilled with a Greenlee Brothers & Co. multiple borer.

Box springs are nailed to frames by pneumatic nailers made by Power Line and Thor Power Tools, after which the units are covered with padding and ticking.

Near the mattress production area in the soft goods division is the Simmons Hide-A-Bed and lounge couch assembly line, where special jigs, which can be tilted in several directions, are used to hold the Hide-A-Bed back and base as it is being upholstered. After upholstering, the folding bed mechanism is bolted to the back unit with pneumatic power tools made by Paslode and Senco.

The Hide-A-Bed mechanisms are produced by the plant's hard goods division. Wood frame sides are upholstered and joined to the Hide-A-Bed unit, completing the construction.

Finishing touches, such as tacking back upholstery, insetting mattresses and fitting cushions, are completed before packing. Jack-knife sofa beds follow similar production procedures. On some sofa and lounge models, No-Sag and Seng springs are used.

Upholstery material, which is cut and sewn in a department close to the Hide-A-Bed line, is used at the rate of 40,000 yards a month amounting to a $200,000 purchase. Small parts, more than 1,400,000 pieces of hardware, rivets and bolts are used each month by Simmons at a cost of $30,000.

Guiding the multimillion dollar production operation, plant manager J. R. Hooper, explained the Munster plant approach to equipment. "In most cases the equipment normally available is not adaptable to our products," he said, "the inner roll border we put on our mattresses isn't made by anyone else so we designed and built our own machines to do the job. The Auto-lock construction of our inner-spring mattress unit is another example.

"There is also the problem of quality. In some of the things we develop, it is necessary to work with extremely close tolerances. For example, the machine we built to produce springs for our open coil construction mattress uses tolerances of .001 to .002 in. For mattress spring construction, that is precision.

"Finally, we like to have as many multi-operation machines as possible for better manufacturing efficiency. Some of our machines were built to get away from single operation manufacturing," he said.

More standard equipment is found in the company's hard goods division, which produces metal furniture and hospital beds.

Central division manager, L. H. Weyrough, head of Simmons' largest sales and production area, described the Munster plant as one of the most efficient plants in the world. Designed for a steady production flow, both in-coming materials and outgoing products are quickly routed. A 19 freight car spur is located entirely within the hard goods division and a second car spur runs beside the soft goods plant. An in-the-building, 20 trailer truck loading area was specially designed for expedient materials handling, the central division manager reported.

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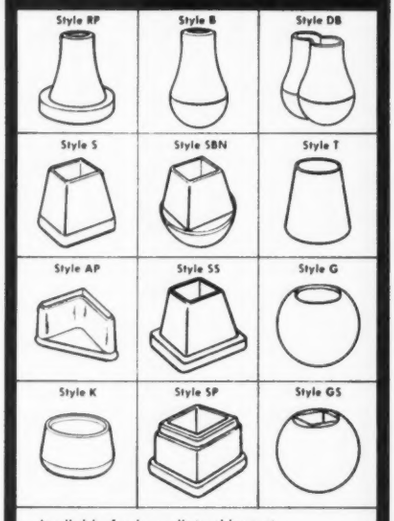

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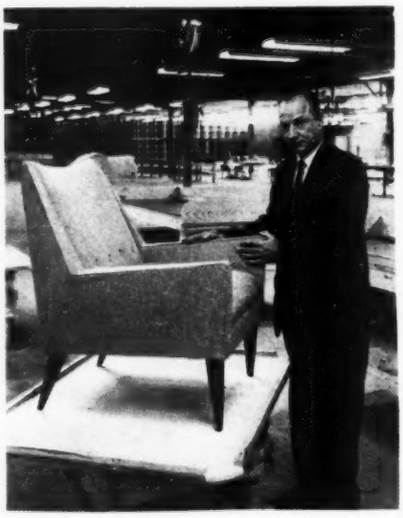
HOW IT WORKS – Samuel Wexler, left, president of Selig Manufacturing Co., explains working features of a Paslode air tacker to North Carolina's Gov. Terry Sanford, following dedication of new plant.

Selig Opens New Plant At Siler City

A new 75,000 sq. ft. one-story factory dedicated April 20 at Siler City, N.C., marked the establishment of the seventh plant operated by Selig Manufacturing Co., leading manufacturer of contemporary upholstered furniture.



CHAIRS OF THIS TYPE will be manufactured at new factory; demonstrating the furniture piece is Joseph M. Clark, plant manager.

Present at the ribbon-cutting ceremonies were Gov. Terry Sanford of North Carolina; Mendel Selig, chairman of the board of Selig; Samuel Wexler, president; Robert Wexler, executive vice president plus other company officials and community leaders.

The company will manufacture its Monroe line of promotional modern living room furniture. No woodworking will be performed at the new factory; frame parts will be shipped from supply sources.

The plant began operation May 1 with 52 employees trained in an extension school of the Guilford Industrial Education Center. Eventually the work force is expected to reach 250.

Selig, whose headquarters is at Leominster, Mass., is noted for its leadership in Danish styling in recent years. A line of Danish furnitue, made in the company's Copenhagen plant is imported and marketed in this country. Other plants are at Fitchburg, Mass.; Los Angeles, Cal.; Monroe, La.; and in Ontario, Canada.—*R. A. Helmers.*

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FOR DATA CIRCLE FDM NO. 1855

CERTIFIED WOOD PARTS
FROM PAGE 33

factor in your raw materials would be one of the easiest to cut. However, your real problem may be manufacturing the dimension product itself.

On these two items mentioned, you generally have control over and can accomplish without much difficulty; but in eight out of ten times this is not the solution. First, less advertising lowers potential sales, and increased sales are what you need. Second, lowering the purchasing price of lumber usually reduces the number of good mills that are interested in selling to you; but most important, cheaper lumber prices mean poorer quality lumber. This, too, is being penny-wise and pound foolish. In our dimension plant, actual records show that we can pay as much as 20 per cent more for the same grade of lumber and still realize a better profit from the higher priced lumber. Short lumber, heavy to 8′ and 10′ lengths, gives much poorer yield than good average lumber with a fair percentage of 14′ and 16′.

These facts we know because when you operate a dimension plant as a separate and distinct organization it is absolutely necessary to know every individual cost. Profits in the manufacture of wood parts can be very elusive, whether made by a furniture plant or dimension manufacturer.

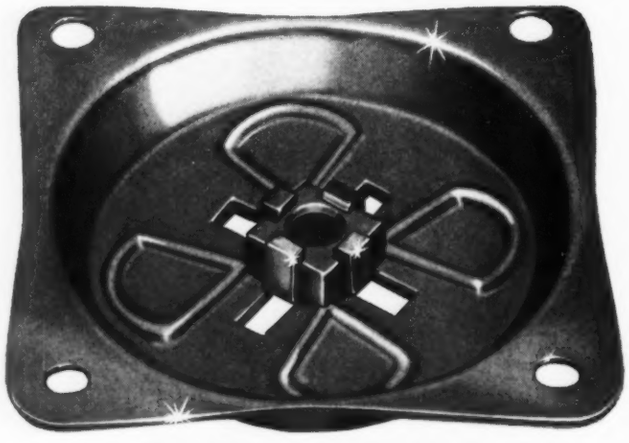
I doubt if any of you in the furniture business would ever consider making flooring in competition with a modern flooring plant. Making dimension parts is now becoming just as specialized. Seldom, if ever, has a furniture manufacturer ever considered making his own hardware. Very few have found it practical to make their own veneer or plywood. For the same reason he would not consider making these items, many furniture men are taking a second look at buying certified wood parts either semi-rough or completely machined.

Although there is a natural objection to scrapping machinery, equipment, and dry kilns and substituting prefabricated wood parts as the raw material, it is significant that many large, progressive and well-organized furniture manufacturers have done so profitably.

We all dislike to make a change unless the idea is created by ourselves. I well remember the problem we had at our plant when we changed from piling lumber in high piles at the dock to fork lift loads. It was difficult for me to understand why men would insist on lifting lumber up above their heads to pile in the old method, when the new way was to unload the lumber down on low piles. The reason was that the idea put into effect was management's, not the men who were doing the work. The same thinking can apply when you consider possible use of dimension, if you are not careful.

Changing times require changing methods. Some years ago your lumber yard may have been well laid out for lumber handling. Is it so today for modern handling equipment? The area then used for the yard was probably not very valuable, but today it

The Hardwood Dimension Manufacturers Assn. has reissued its Grading Rules for the measurement and inspection of hardwood dimension parts, interior trim and moldings and stair treads and risers. The book includes standards formulated by the U.S. Bureau of Standards of the U.S. Dept. of Commerce, in cooperation with the Hardwood Dimension Manufacturers Assn. Copies are available from HDMA at 25 cents each.



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FOR DATA CIRCLE FDM NO. 1913

may be worth a considerable amount of money. Kilns that lost their efficiency years ago may be taking a lot of valuable ground. Slowly but surely real estate values have climbed higher and higher each year.

The average furniture manufacturer, producing his own dimension, finds it necessary to carry an inventory of lumber from three to four months' consumption, in all the species used. With such a large inventory, fluctuation in the market price of lumber could result in a serious loss. In any event, several thousands of dollars working capital can be tied up in lumber inventory for long periods of time.

By turning to the dimension parts manufacturer for your supply of wood parts, you can avoid these hazards and always be assured of an adequate supply of materials with a much smaller investment in inventory.

The purchase of kiln dried prefabricated wood parts permits the furniture manufacturer to operate his factory with a minimum of invested capital in machinery and equipment. This is especially important where the user is faced with the problem of congestion in his factory. The release of valuable floor space for assembly and storage provides increased turnover in working capital.

As a comparison, a plant operating in just 19,000 sq. ft., including office and storage area, with 40 employees using completely fabricated parts, sanded and ready to assemble, compares with the same volume of business as a plant requiring 100,000 sq. ft. of floor space, not to mention dry kilns and rough lumber storage areas, and 100 employees.

Five times the floor space and two and a half times the employees required to get the same results. Quite an item when you consider your heating and maintenance alone on an area five times larger than needed if you used completely machined parts.

Sometimes we can't see the forest because of the trees. How many times have you visited your competitor's plant to see what new methods he may be using in his production line? Have you ever sat back and looked at your plant through the eyes of a stranger? If you have, then I'm sure you have realized that at least one or two methods you have been using in production for many years are now outdated, but until you took that long hard look, you didn't realize how much this old method may have been costing you.

I would like to give you a brief outlook on the future of hardwood dimension as I see it. Each year properties in the cities become more valuable. Lumber storage areas used by plants have increased in real estate value to a point where it is sometimes good business to sell, or to use it yourself for plant expansion.

Old inefficient dry kilns take up a lot of room and are expensive to operate. In many cases it is not practical for a plant to handle its lumber with lift trucks, which can result in very expensive lumber handling costs.

Many furniture plants operating today could increase their production of finished items as much as 5 times without increasing the square footage of their plant, if they stopped cutting lumber and used dimension.

Increased freight costs, heavier overhead, and higher labor will make more plants to use dimension.

A dimension plant with several ac-

TO PAGE 80

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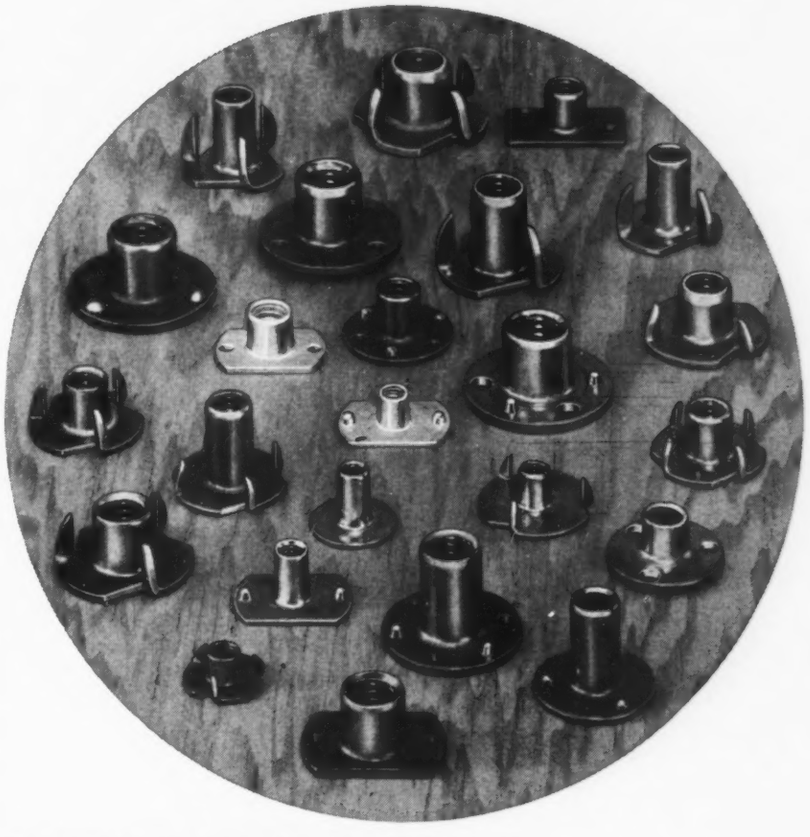

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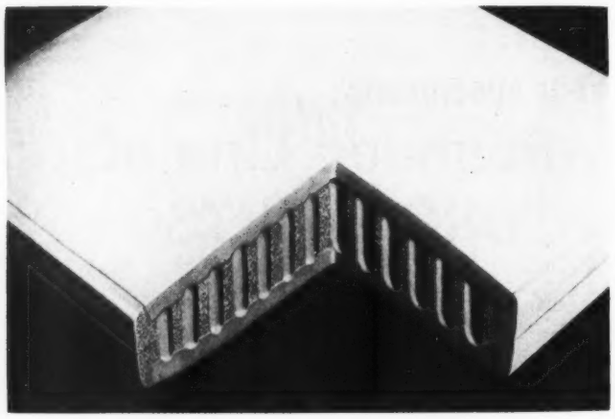
FDM IT'S NEW

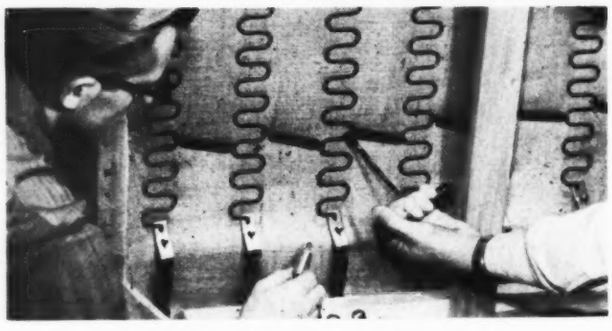
For more information on items listed in the IT'S NEW Columns use the handy Reader Service Card in this issue. Complete details on these items will be sent to you by the manufacturer.



Cushion Product Utilizes Molded Foam Combination

A new molded combination of natural latex and flexible plastic foam, called Sta-C-Foam, was introduced by American Latex Products Corp. The manufacturer reports the combination offers a mattress and cushion product that provides a smooth blemish-free surface of plastic foam with resilient cool breathing qualities of pure latex. Following continuous testing under various conditions, the firm reported that molded mattresses and cushions will provide the desired support, coolness and proper weight distribution uncommon in familiar latex or urethane foam materials.

For More Information Circle Reader Service Number 802



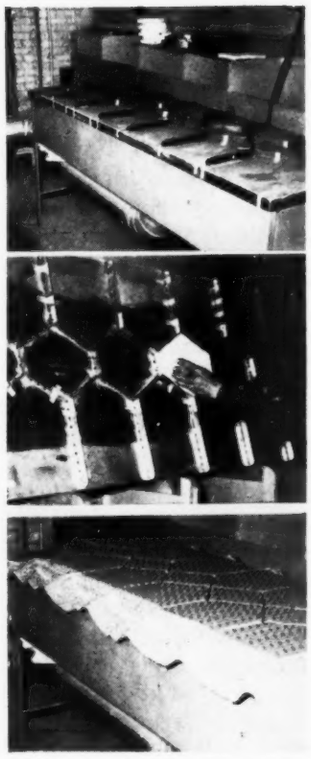
Adjustable Spring Unit

New feature in Torsion-Rest unit from No-Sag/Morley enables manufacturers to individualize soft or firm supports on completely upholstered pieces by changing helicals, without dismantling them. Spring action adjustment can be made on existing models, on market samples, or to test various seating "feels" on new pieces. One basic spring construction offers wide variety of cushion supports.

For More Information Circle Reader Service Number 803

Tufting Machine Speeds Upholstery Construction

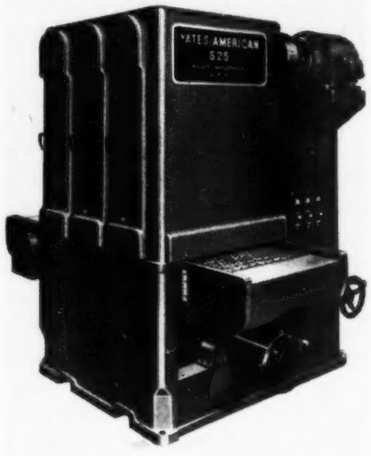
An inexpensive tufting machine which speeds manufacture of stitchless tufted furniture has been developed by Java Latex and Chemical Corp. Used with new, fast-drying Javatex Tufting Adhesive, it eliminates need for time-consuming operations and skilled sewing machine operators, manufacturer reports. Tufting is accomplished by inserting precut foam rubber biscuits into a metal pattern and covering with fabric. Fabric is automatically aligned by the machine, assuring perfect positioning and uniformity of all pieces. The non-staining adhesive is then applied to form a strong, permanent, waterproof bond between fabric and foam.



For More Information Circle Reader Service Number 804

Model Does Three-Stage Sanding in One Pass

Model S-25 belt sander, a high production unit that combines fast stock removal with finest finishes in one pass, was announced by Yates-American Machine Co. The first two belts bring stock to selected thickness, and the third belt removes a minimum of stock, providing superior finish. Three-stage sanding in one pass eliminates multiple handling of stock for the several steps in drum, belt and stroke sanding, increasing operator productivity, manufacturer reports. Belts run over a flexible cushioned shoe which can be varied in hardness to individual requirements producing finish comparable to that obtained on conventional stroke sanders. Feed rate is infinitely variable from 20 to 60 f.p.m. It handles stock as short as six in. and widths to 24 in.



For More Information Circle Reader Service Number 805

TO PAGE 48

YES— SCHOOL FURNITURE CAN BE SILENCED

WITH DOT® SUPER SILENT SWIVEL GLIDES

This is the glide that has been scientifically designed to kill noise.

Furniture equipped with DOT Super-Silent Glides floats on rubber, slides silently and smoothly on steel because there is *no metal-to-metal contact whatsoever* between the hardened steel base plate and the rest of the glide. The base is completely insulated by the intervening rubber cushion. In addition, the swivel action feature ensures that the glide *always stands flat* so it can't dent or gouge floor surfaces.

Further information available on request.

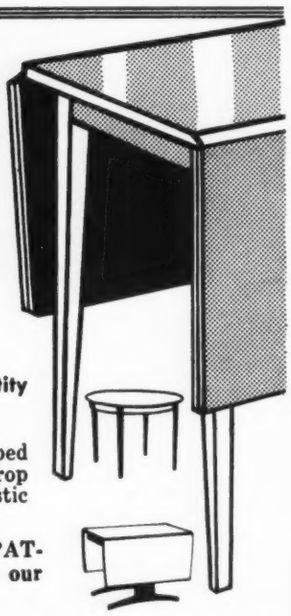
MAKERS OF DOT FASTENERS

CARR FASTENER COMPANY

Division of United-Carr Fastener Corp., Cambridge 42, Massachusetts

Offices in:
Atlanta, Boston, Chicago, Cleveland, Dallas, Detroit, Kalamazoo, Los Angeles, Louisville, New York, Philadelphia, San Francisco, Seattle.

laminated TOPS



Custom Built to Specifications . . .

Any Size—Any Shape—Any Quantity
Any Pattern—Any Style

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Over 1000 BRAND NAME PATTERNS AVAILABLE. Put our versatility to work for you!

We specialize in manufacturing laminated table tops for institutional, professional, office, and household furniture regardless of shape, style, size or quantity in either plastics or wood veneers.

Our low, low operational costs enable you to reduce the operating costs of your own plant, and Eliminate: Culls, Storage, Waste, Rework, Working Space. The tops can be furnished rough—or—finished ready to mount.

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FOR DATA CIRCLE FDM NO. 1861

FIBRO-KANE WEBBING

- Has the attractive variegated appearance of natural cane.
- Is much lower in cost, permitting its use in many applications where natural cane has proved too expensive in the past.
- Is easy to apply and finish — can be stained to harmonize with various woods.
- Does not become brittle with age. No undesirable loose "hairs" or splinters.

Samples and full particulars on request.

E. W. TWITCHELL, INC.

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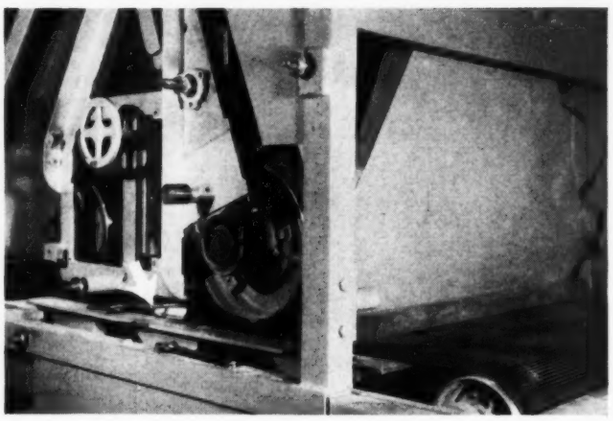
FOR DATA CIRCLE FDM NO. 1912



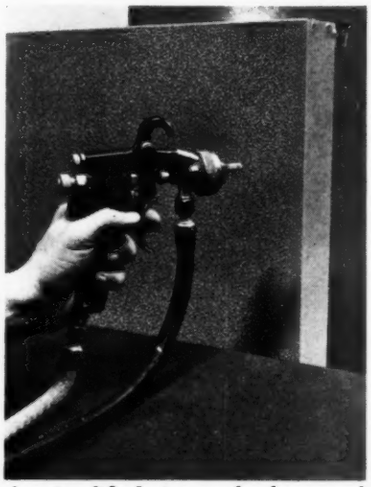
Wide Belt Sander Has Oscillating Platen

A wide-belt sander that combines cutting down and finishing functions, producing excellent finishes without stroke sanding, has been developed by Sherrill Machine Co. The Model FS sander finishes panels or dimension stock under an oscillating platen after sanding the work against a serrated rubber contact roll. Manufacturer reports panels with half their surface finished on a stroke sander and the other half on this model, then sent through the finishing room, show no discernible difference between the two halves. The unit is available in widths to accept abrasive belts 24, 38, 50 and 51 in. wide, all 120 in. long, and driven at 4500 surface ft. per minute by a 50 h.p. motor.

For More Information Circle Reader Service Number 806

Spray-On Vinyl Finishes Come In Multi-Colors

New multi-color, spray-on vinyl finishes have been developed by Metal & Thermit Corp. In a two-step system, decorative vinyl finishes in unlimited color and with controllable texture can be applied to either phosphated steel or aluminum by conventional or electrostatic spray techniques. The firm reports the system permits application of a tough, multi-colored vinyl finish to products after fabrication, producing savings over methods which start with prelaminated or precoated sheet metal. Inventory problems can be simplified since only the actual uncoated metal need be stocked. Different colors and textures are obtained by changing vinyl spray material.



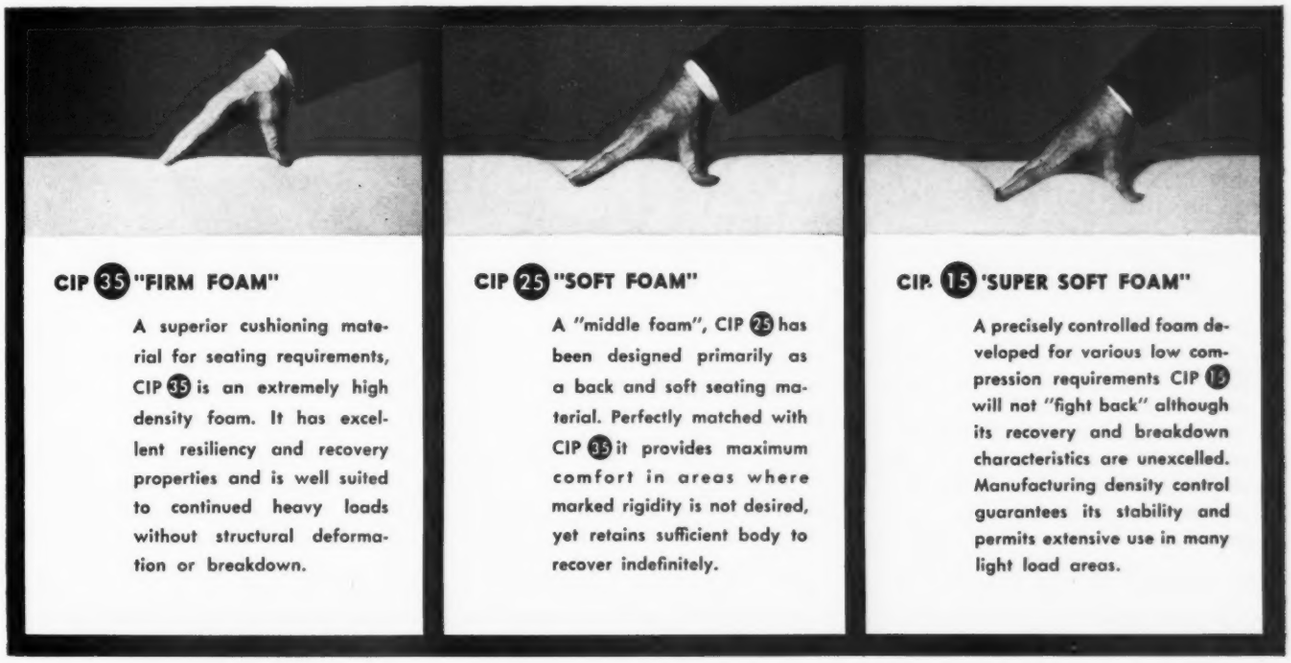
For More Information Circle Reader Service Number 807

TO PAGE 50

CIP* announces major foam advance for all furniture applications!

CIP *"Comfort Control"* FOAMS

Now, for the first time a complete line of "controlled comfort" polyurethane foam is servicing the furniture industry. Four years of research has gone into its perfection. Special machinery and precisely controlled chemical ingredients guarantee batch-to-batch uniformity and absolutely controlled resiliency, compression, and density factors. Furniture Manufacturers reap the benefits. Now you can confidently select the particular grade best suited to each application. Three of the standard CIPFOAMS — 35 ; 25 ; 15 ; are illustrated below:



CIP 35 "FIRM FOAM"

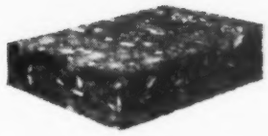
A superior cushioning material for seating requirements, CIP 35 is an extremely high density foam. It has excellent resiliency and recovery properties and is well suited to continued heavy loads without structural deformation or breakdown.

CIP 25 "SOFT FOAM"

A "middle foam", CIP 25 has been designed primarily as a back and soft seating material. Perfectly matched with CIP 35 it provides maximum comfort in areas where marked rigidity is not desired, yet retains sufficient body to recover indefinitely.

CIP 15 "SUPER SOFT FOAM"

A precisely controlled foam developed for various low compression requirements CIP 15 will not "fight back" although its recovery and breakdown characteristics are unexcelled. Manufacturing density control guarantees its stability and permits extensive use in many light load areas.



CIPBOND

CIPBOND is a homogenous base of specially shredded and colored Premium Polyurethane particles compactly bonded together.

No more unstable foams . . . no more varying compression ratios . . . no more "seconds", because all three CIP FOAMS are formulated with the same high quality ingredients (no scraps, no fillers, no rejects). All three CIP FOAMS are precisely controlled through compounding, manufacture and curing to insure absolute uniformity in accordance with Rubber Manufacturers Association Standards. All three CIP FOAM grades, regardless of density, have the same outstanding polyurethane advantages.

CIPFOAMS; CIP 35, CIP 25 and CIP 15 are now available in all sizes and custom shapes, with every piece bearing the exclusive color coded CIP certification grade number. Carolina Technical Assistance is immediately available to help you with all your cushioning problems.

Write for Bulletin 200 or call collect for more detailed information.

cP®

CIP-35 FIRM FOAM
CIP-25 SOFT FOAM
CIP-15 SUPER SOFT FOAM
CIPBOND

* Carolina Industrial Plastics
DIVISION ESSEX WIRE CORPORATION
Mt. Airy, North Carolina

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Contains ALL material you need to repair ALL furniture finishes

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50 Blendal Stains
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This material perfect for padding in furniture Arms-Backs-Tufting, etc.

Can manufacture to your specifications and designs. We also mold special shapes-laminate and combine all types of cushioning material.

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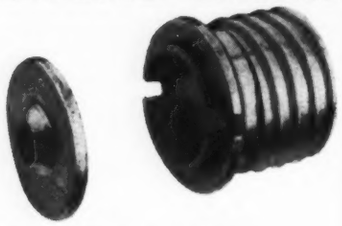
FOR DATA CIRCLE FDM NO. 1889

NEW!! SELBY BUTTON MAGNETIC CATCH



Mighty Magnet Screws *into* Door or Door Frame Solid Brass Casing

ONLY 9/16" DIAMETER—⅝" LONG

SELBY FURNITURE HARDWARE CO.
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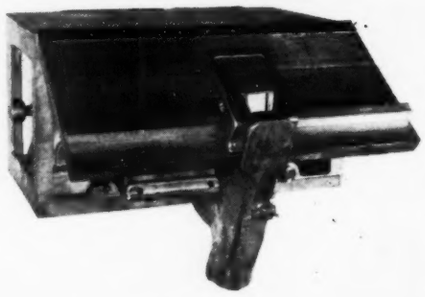
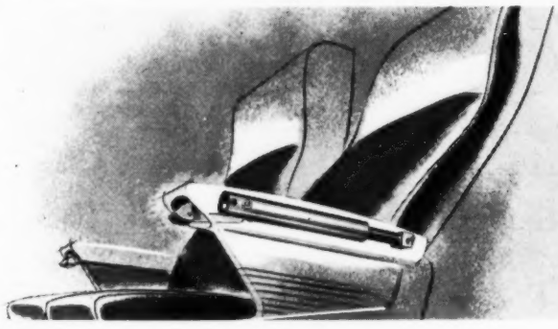
FOR DATA CIRCLE FDM NO. 1905



Saw Has Spring Load Action

A Lattner trim saw which combines operator's reflex action with a unique spring loaded table to make it a fast cut-off saw, was announced by National Die and Machine Works, Inc. The spring loaded table is inclined for gravity positioning of material. The saw can be equipped with fixed of adjustable stops and is available in single and double units.

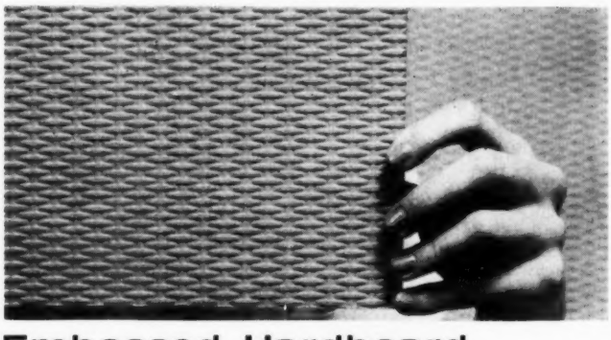
For More Information Circle Reader Service Number 808



Reclining Seat Lock

A reclining seat lock, providing infinite adjustment with positive locking features within a self-contained unit, having unique mechanical simplicity and design, has been developed by the Roton Div. of The Anderson Co. A feature of the lock is that seats may be readily "dressed up" at the end of a trip, without need for operating each individual release.

For More Information Circle Reader Service Number 809



Embossed Hardboard

A new embossed hardboard pattern with the appearance and texture of fine wicker work, was introduced by Edward Hines Lumber Co. Called Wickerboard, it can be used in any application where the combination of low-cost hardboard with striking texture of wicker is desirable. It will take paint without sanding or filling, is grainless, has warp free structure and easy workability.

For More Information Circle Reader Service Number 810

TO PAGE 52

How to use Clad-Rex vinyl-clad metal in the design and engineering of school equipment and other products

Vinyl-on-Steel Folding Gymnasium Seating by Brunswick

The sheet metal nature of Clad-Rex vinyl-clad metal would seem to indicate generally how it can be used. However, the unusual characteristics added by the vinyl coating itself make the areas of usage much broader than might be expected. So as not to overlook possible applications within your product line, consider Clad-Rex as a basic material. Measure each of its advantages against the individual parts and subassemblies of your products as well as the whole enclosure. In this manner your manufacturing methods and costs, sales appeal, and product profit can be best helped.

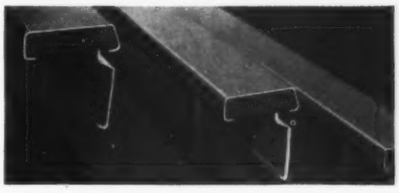
The sales appeal of Clad-Rex vinyl-clad metal

The vinyl surface of Clad-Rex is in fact, a finish. It is available in a broad range of colors and embossed textures. Actually Clad-Rex provides an almost unlimited variety of stock and custom multi-color patterns. Special prints in register can be provided also.

The abrasion resistance of Clad-Rex vinyl-clad metal

The vinyl surface of Clad-Rex, being a poly-vinyl chloride film, offers great resistance to abrasion. Texturing effectively hides even metal-deep cuts in the vinyl surface.

The newly designed folding gymnasium seating (shown above) takes full advantage of the abrasion resistant nature of Clad-Rex vinyl-clad metals. In this application Brunswick is using a practical, yet inviting leather grain pattern. This eliminates



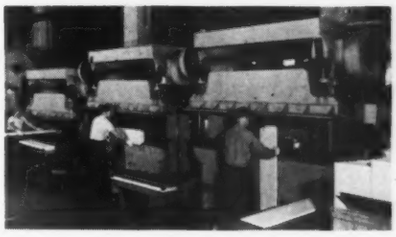
the coldness of painted metal, as well as the relatively delicate finish of wood.

The corrosion resistance of Clad-Rex vinyl-clad metal

Having all the advantages of poly-vinyl chloride, the surface of Clad-Rex vinyl-clad metal protects against acids, alkalis and other corrosive chemicals. It is free of pin holes. As a result, it offers unusual dielectric properties as well. Outdoor weatherable or stain-resistant vinyl-clad metals are also available.

The fabrication of Clad-Rex vinyl-clad metal

Brunswick's methods for fabricating Clad-Rex vinyl-clad metal are much like they used for bare sheet metal.



Finishing, of course, is not needed. Press and brake forming, crimping, punching, expanding, etc., are all practical.

Most important to any remarks about fabrication—although Clad-Rex is obviously different from bare metal, the unusual quality of the vinyl-to-metal bond tends to minimize the difference. As a result, Brunswick fabricates within their own facilities without complex or unusual techniques or tooling.

Although Clad-Rex vinyl-clad metal parts can be assembled with stud and projection resistance welding, some limitations in spot and seam welding do exist. Until the present research for a solution is completed, other conventional methods of joining should be used.

A source of engineering service

Take full advantage of the engineering and research facilities of Clad-Rex. Call or write for Report 6101, "How to Use Vinyl-Clad Metal in the Design and Engineering of Commercial Furniture". *Simoniz Industrial Products, 11526 West King Street, Franklin Park, Illinois (Phone Gladstone 1-2323).*

24C

Clad-Rex Vinyl-Clad Metal is a product of

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CLAD-REX VINYL-CLAD METALS • **SIMONAIRE** FOAMS AND INDUSTRIAL CHEMICALS
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BESTWOOD® "CANEBOARD"

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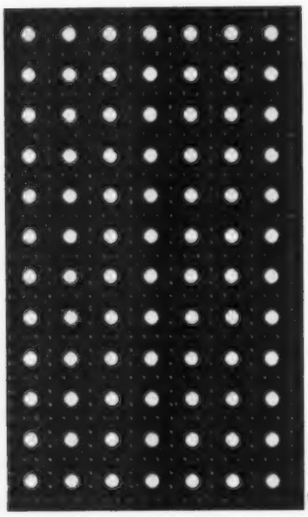

Brand new, decorative, versatile! Offers you wide opportunities for attractive, salable effects as well as practical usage.

Available in ⅛" thick, tempered, smooth two sides, perforated in a new pattern for individuality and good taste.

Ideal for cabinet backs, decorative fronts, sliding doors—TV and Hi fi cabinets, etc.

Takes finishes beautifully and is strong and durable.

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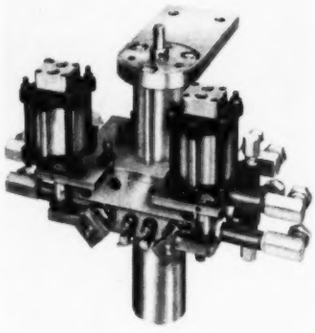
FOR DATA CIRCLE FDM NO. 1878

IT'S NEW/FROM PAGE 50

Large Size Foam Mixing Head

A large model polyurethane foam mixing head, allowing for up to six separate foam material streams valved into the mixing chamber for on-off operation, has been developed by The Martin Sweets Co. The unit makes possible the pouring of large foam masses on shot-type, production installations and the multiple-component design eliminates the pot life factor previously encountered when pre-mixing of some ingredients resulted in material loss through chemical deterioration.



For More Information Circle Reader Service Number 811

Air-Driven Stapling Plier

An air-driven stapling plier for fast, efficient fastening of sisal pads to tops of mattress springs and other upholstering jobs, was developed by Bostitch, Inc. The tool will also perform various package sealing operations. It comes in six models to drive staples from 3/16 in. to 9/16 in. long in three wire sizes. It weighs 3 lbs. 15 oz., is operated with one hand and holds up to 210 staples, operating at air pressures of 45 to 90 p.s.i.

For More Information Circle Reader Service Number 812

Bench-Mounted Finishers

A flexi-mount belt unit and flexi-mount wheel unit that can be adjusted to any working height and angle, were introduced by J. M. Nash Co. Both units are single heads taken from Nash multi-spindle rotary finishers and adapted to operate independently. Each is entirely self-contained including one h.p. electric motor. Both units are all-purpose and portable.

For More Information Circle Reader Service Number 813

TO PAGE 54

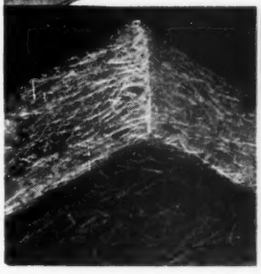
cut out all waste with

Burton-Dixie PACKAGED PADDING

. . . made exactly to your specifications

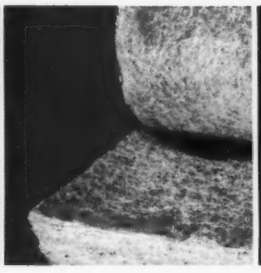
combines sewed padding securely stitched to a burlap skirt.

- **Eliminates two complete operations in your factory**
- **Cuts out all waste of insulator, padding and burlap because Burton-Dixie's sewed padding is made exactly to your specifications**
- **Speeds up your production and assures a uniform finished product**
- **Available in any size or shape**
- **Reduces your inventory to one item only instead of three**



SI-LATEX . . . a combination of interstitched sisal and pure latex, vulcanized together to make an extra strong spring insulator.

- **Laboratory proved to outwear ordinary spring insulators 2 to 1**
- **Eliminates all spring feel . . . cannot cup or hollow out**
- **Available cut to any size or shape . . . plain or stitched to cotton felt**

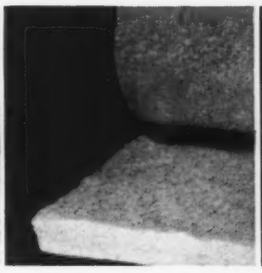


SISAL The finest quality you can buy . . . consisting of only the toughest, whitest sisal fibers available.

- **Cut to any size or shape**
- **Also available in rolls of any width**
- **Loose punch for a soft pad . . . or tight punch for a firmer pad**
- **Loom pad also available for a much firmer pad**

SEWED PADDING Spring insulator and fine quality cotton padding sewed together to save you labor and assure uniformity. For use on all spring constructions.

- **Si-Latex – Cotton. Burton-Dixie's exclusive Si-Latex insulator and cotton padding**
- **Sirex – Ordinary sisal insulator and cotton padding**



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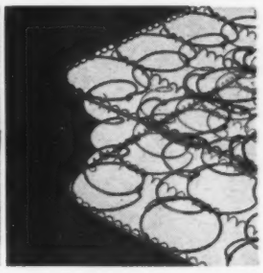

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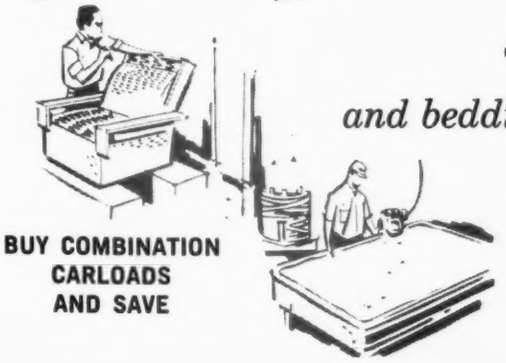

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one dependable source for your upholstering and bedding needs for over 60 years

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SIZE 34U—1" DRIVE

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Only Ingersoll-Rand Impactools give you the design and construction EXTRAS LIKE THESE that pay off in increased tool output, longer service life and minimum maintenance.

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- Life Guard Commutator. Exclusive I-R construction prevents motor damage, permits easy dressing, provides long brush life.
- Job-Tailored Motor. Not "adapted" but built specifically for rugged Impactool duty.
- T-Anvil Drive. Unlike other types, provides true radial blow with maximum power transmission.

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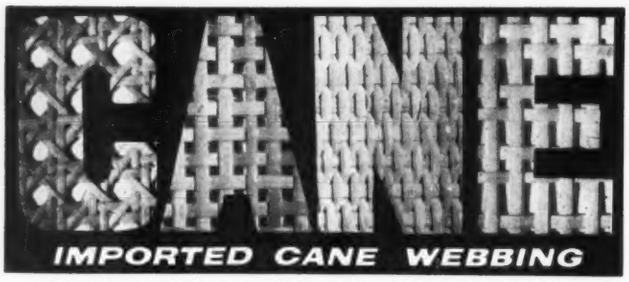

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STEVEN PRODUCTS CO.

Division of Glomar Industries

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•

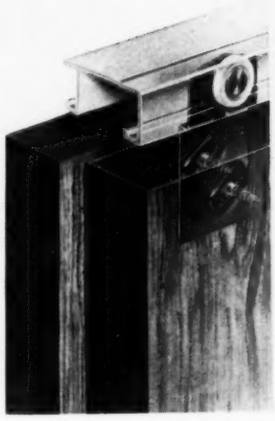
Manufacturers of Furniture Ferrules

FOR DATA CIRCLE FDM NO. 1909

IT'S NEW/FROM PAGE 52

Sliding Door Hardware

A line of reversible, by-passing sliding door hardware is available from Grant Pulley and Hardware Corp. The line, 8032, features one basic set, available in four track lengths, for openings from 4 to 8 ft. Each set is reversible for ¾ in. or 1⅜ in. doors. Manufacturer reports the line is low cost, has sturdy steel track, fully adjustable apron carriers with nylon wheels, adjustable nylon floor guide, and brass pulls.



For More Information Circle Reader Service Number 814

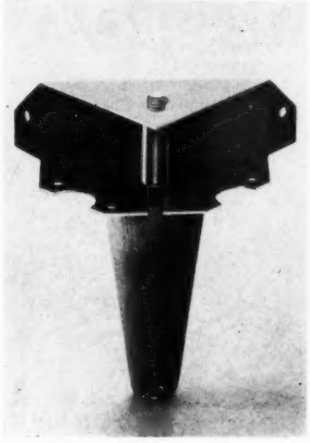
High Style Ball Caster

A high-style ball caster, called the Bassick Ball, was announced by the Bassick Co. The caster has wide tread and features easy swiveling. It has only three moving parts and is permanently lubricated before assembly so it will not squeak or bind. The caster comes in polished brass, satin brass, statuary bronze, English antique, polished or satin chrome finishes, with swivel top plate and a variety of stems to fit most furniture.

For More Information Circle Reader Service Number 815

New Corner Construction

A steel corner construction with built-in leg vise, called Uni-Kay, is offered by Kay Manufacturing Co. Six screws permanently lock the unit to straight dimension-stock frames in automatically squared corners, steel reinforced and two-way anchored, replacing costly production operations. It is available to accommodate right angle corners with vertical legs, or legs at 12° angles and for leg support of long straight rails or centered legs.



For More Information Circle Reader Service Number 816

TO PAGE 56

Yes—you'll drive 750,000 staples before a Paslode PR needs *any* attention! A guarantee? No, it's the average experience of Paslode PR users, and it's a lot of staples on any production line.

A FEW PASLODE PR FIRSTS

- First staplers to combine air return with a high speed nylon piston
- First staplers with a single driving part
- First staplers with light-touch trigger that doesn't work against line pressure

Paslode catalog free. Shows hand and pneumatic staplers, and the Paslode CLIPPER—first and only portable air powered tool for putting magazine-fed clips around two wires.

Superior dependability is built into the PR—the first light weight stapler with air return piston to eliminate parts most subject to breakage.

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The speed, handling ease, and dependability of Paslode PR staplers are the result of continuing research and development by a company with 25 years of specialized experience—and go far to explain the rapidly growing use of PR Series tools wherever quality work is important and down-time is expensive.

There's a Paslode representative near you to help you get the most out of your Paslode tools—and to help you keep production rolling smoothly. He will gladly demonstrate these tools at your convenience. No obligation. Let us send you his name.

PASLODE COMPANY

Division of Signode Steel Strapping Company

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FOR DATA CIRCLE FDM NO. 1895

IT PAYS TO USE Silvatrim® PLASTIC MOULDINGS!

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- Available in permanent bright or satin brass, gold, chrome finishes. **LOOKS EXACTLY LIKE METAL!**
- Available to match any high or low-pressure laminate . . . woodgrain, marble, glitter, etc. patterns!
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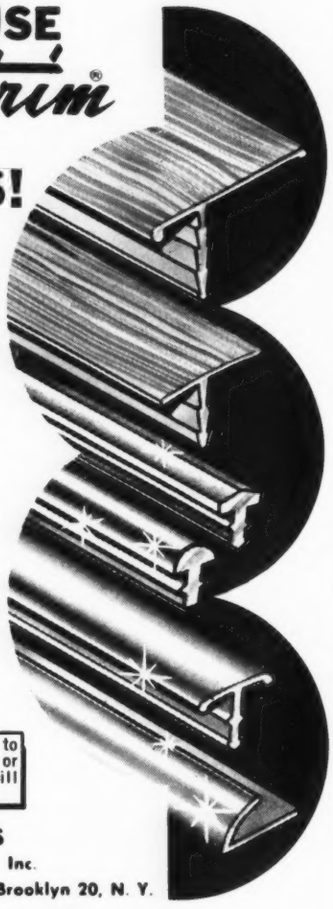
Your choice of hundreds of stock cross-sections or special designs created from your blueprint specifications.

Economical **SILVATRIM®** plastic mouldings are functional, versatile and decorative. They are highly flexible, easy to form and simple to apply. **SILVATRIM®** formfits to any edge, rout line or surface. Each rigidly inspected shipment is made in coils or specific lengths to eliminate waste.

Compare **SILVATRIM®** costs and quality to that of any other moulding. Write for samples, literature and instructions on how easily **SILVATRIM®** can be applied.

SILVATRIM® SPECIAL SERVICE
Special cross-sections can be created to your specs. Send blueprint, sketch or sample of shape you need. We will match it perfectly!



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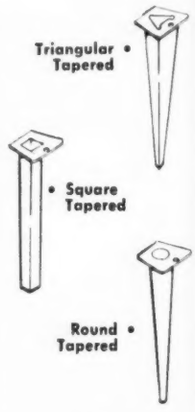
FOR DATA CIRCLE FDM NO. 1876



SaFast METAL LEGS

CUSTOM CONSTRUCTION AVAILABLE
ALL FINISHES

SaFast Inc.
57 Birch Hill Road Locust Valley, N.Y.
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FOR DATA CIRCLE FDM NO. 1904

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Imported
Quality CANE Webbing

Beauty and grace of cane — assets to modern and traditional design. Your inquiry is invited for samples and prices of the wide variety of patterns available.

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Import-Export Established 1872
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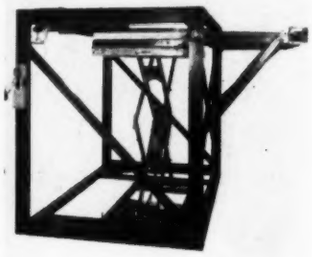
FOR DATA CIRCLE FDM NO. 1875

Door and Panel Stacker

A low-cost stacker, designed to operate behind sizers and sanders, is introduced by the Jenkins division of Kohler-Joa Corp. The Unit requires no pit in the floor, can be made to match any machine bed height and sizes range to suit customer application. Basic units include gear-and-rack adjustable fence and alignment guides, rapid life at end of cycle, and off-bearer's control panel.



For More Information Circle Reader Service Number 817

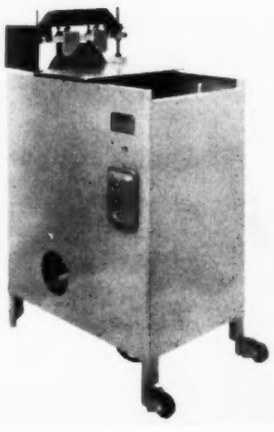
Hand Magnetic Unit

A manually-operated magnetic unit for handling metal parts or for feeding round, square, or irregular sheets into presses, was introduced by Jess Corp. The hand magnet picks up and securely holds quantities of loose, nuts, bolts, screws or other light metal objects. Positive grip is assured even on wet, greasy, sharp or hot metal objects. Squeeze on handle instantly releases parts, reports manufacturer.

For More Information Circle Reader Service Number 818

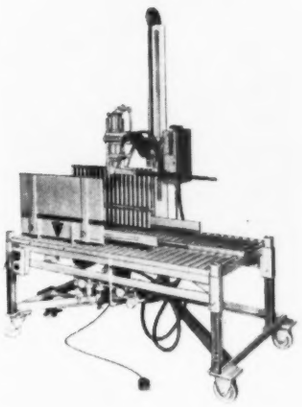
Traveling Cut-Off Saw

An automatic traveling table cut-off saw, designed to increase production and lessen handling where nonferrous metals must be cut on a continuous basis, such as in manufacturing metal furniture, is offered by Vern Emery Co. The unit has 14 in. circular blade and is powered by a 1 h.p. motor. It automatically cuts shapes up to 4⅞ in. high and flat material to 12 in. wide with ⅛ in. accuracy. It is 20 in. by 30 in. by 40 in. high, can be easily moved or bolted for stationary operation.



For More Information Circle Reader Service Number 819

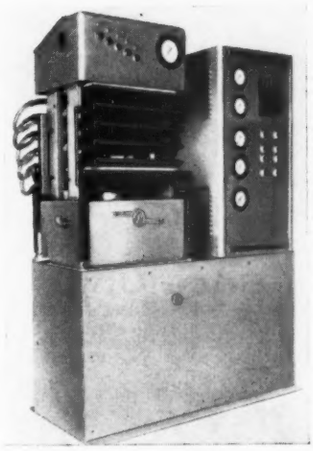
Carton Stapler Unit



A dual stapler model which simultaneously closes the top and bottom of corrugated cartons has been developed by International Staple and Machine Co. The unit has special high center device arms with carton guide extensions to accommodate extra long and extra high cartons. It has special adjustment on legs for a wide variety of heights and is equipped with wheel casters and locks. Manufacturer reports it can be easily moved about.

For More Information Circle Reader Service Number 820

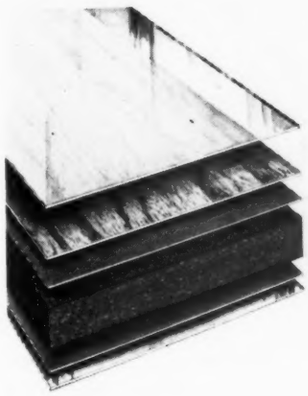
Laminating Press



A hydraulic press which produces laminations of various materials has been developed by Kingsbacher Murphy Co. The press exerts force from zero to 75 tons, manufacturer reports. Motorized hydraulic unit is controlled by push buttons and sequence timer allows control of platen opening and closing, application of platen pressure and amount of time needed for platen heating and water cooling.

For More Information Circle Reader Service Number 821

Solid Plastic Board



A solid plastic board construction called Norplex, is offered by Northern Plastics Corp. A melamine coated decorative sheet, overlay and underlay are fused into solid mass by extreme heat and 1000 p.s.i. laminating pressure. Manufacturer reports the product is structurally rigid, requiring no backing of plywood or other material. It is available in almost any decorative or natural wood pattern, is cigarette-proof and resists heat, abrasion, staining and chipping.

For More Information Circle Reader Service Number 822

TO PAGE 58

Diehl Cutterheads
L-O-N-G on quality!
Diehl Cutterheads are made of the best obtainable steels, correctly heat treated, ground to the closest limits. Each head is backed by many years of experience and by unsurpassed engineering facilities. See your Exclusive Diehl Representative for proof of the l-o-n-g quality — and l-o-n-g-e-r profits—you get with Diehl Cutterheads. Or write for Bulletin No. 452.
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FOR DATA CIRCLE FDM NO. 1867

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The Process Documented by
Madison Forest Products Lab.
Bulletin #1269 (1960)

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Oil **Gas** **Steam**

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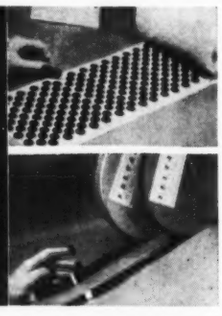
FOR DATA CIRCLE FDM NO. 1884

SELF-STICKING
FELT DOTS
FELT TABS
FELT TAPE



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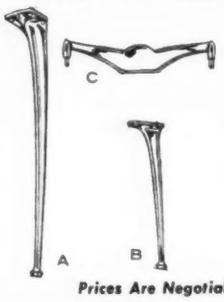
FOR DATA CIRCLE FDM NO. 1864

FINAL LIQUIDATION!



A. 2100 pcs. Aluminum Table Leg Casting. Alcoa Alloy #380 or equivalent. Polished and buffed.

B. 1300 pcs. Front Aluminum Chair Leg Casting. Alcoa Alloy #A-360 or equivalent. Polished and buffed.

C. 4100 pcs. French Provincial Cast Back. Alcoa Alloy #13. Polished, buffed and finished baked gold epoxy. Packaged in polyethylene bags and cellular cartons.

Prices Are Negotiable to Liquidate Excess Inventories.

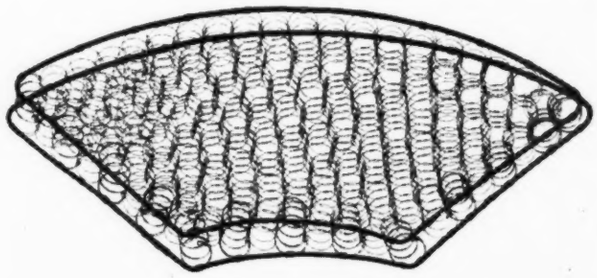
CONTACT Dept. FDM, Daystrom Furniture
Olean, New York

FOR DATA CIRCLE FDM NO. 1865

Hot Wire Foam Cutter

A hot wire foam cutter, provided with trigger action and reported to cut through urethane foam "like a hot knife through butter" was introduced by Upholstery Supply Co. The tool permits cutting or carving of foam into any size, shape or form. It will cut up to 6 in. thick and is practical for crowning cushions, tufting and other specialty work, manufacturer reports.

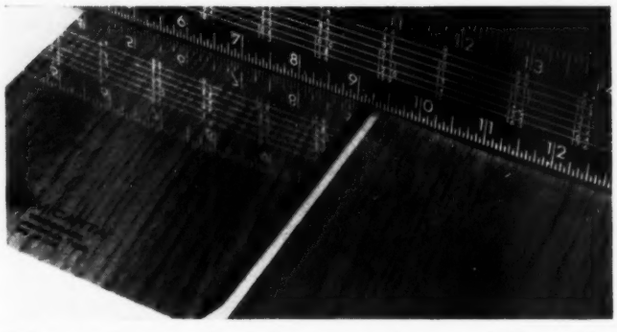
For More Information Circle Reader Service Number 823



Interwoven Coil Base Unit

An interwoven coil base or cushion spring unit, called Intraloc, is being distributed in the United States by the National Cushion Spring Co. Because each coil is interwoven along its entire length with each of the coils surrounding it and locked, coils cannot shift in use, the firm reports. Also, since there are more coils per square foot, less padding is needed.

For More Information Circle Reader Service Number 824



New Laminate Surface Finish

A new surface finish called Lo-Glare was developed by the Micarta division of Westinghouse Electric Corp. The finish reduces reflected light by 80 per cent compared with standard gloss finishes and 50 per cent compared with satinized finishes, manufacturer reports. The finish is available in all general purpose Micarta patterns, colors and woodgrains, in all standard sizes.

For More Information Circle Reader Service Number 825

Glue Resists High Heat

Aliphatic resin glue, designed to widen the application of cold glues because it possesses exceptionally high heat resistance combined with a moderately fast set, easy chipping of squeeze-out, good high humidity resistance and excellent creep resistance, was announced by Franklin Glue Co. Because the glue withstands temperatures of 250° F. to 350° F. it is recommended for use where high heat is encountered such as edge gluing of core stock prior to hot pressing or where the finishing process requires ovens operating at elevated temperatures.

For More Information Circle Reader Service Number 826

Vinyl Has Protective Face

Cherokee, a new leather grain pattern with an invisible safety guard, has been added to the Watahyde line of upholstery vinyls from Harte & Co. A layer of clear vinyl film forms a protective shield on the material, making it invulnerable to surface scarring. It is available in fourteen shades.

For More Information Circle Reader Service Number 827

NEW LITERATURE

THREE-LAYER FLAKEBOARD, manufactured by the Formica Corp., is described in a full-color folder which gives properties and applications of the board as well as end-use versatility.

For More Information Circle Reader Service Number 828

PLASTIC COMPARISON CHART of the major properties offered by nine leading industrial plastics are summarized in graphic form in a 12-page report on cost and performance, offered by Marbon Chemical Div. of Borg-Warner.

For More Information Circle Reader Service Number 829

WEBLINE CONSTRUCTION, a new suspension principle featuring drop-in construction with torcoil action, is illustrated in a flyer from Webster Spring Co., Inc. The firm reports Webline easily fits all styles and types of furniture. It has floating action, multi-coil and balanced construction.

For More Information Circle Reader Service Number 830

POLYETHYLENE furniture and arm rest covers and mattress bags, available in dispenser cartons or continuous rolls with tear-off perforations, are covered by new comprehensive price lists from Coseco of California.

For More Information Circle Reader Service Number 831

WOODWORKING KNIVES and cutters, made of high speed steel or carbide tipped, are described in a booklet from Charles G. G. Schmidt & Co., Inc., Included are multiple wing cutters, shaper collars and special application heads.

For More Information Circle Reader Service Number 832

PORTABLE NAILING TOOLS, reported to reduce costs and improve quality, are contained in a 16-page catalog from Spotnails, Inc. A complete line of fasteners and guns is included. Listings indicate features of each tool, specifications, and staples to be used.

For More Information Circle Reader Service Number 833

*QSA

Craftsman Has It
quality
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BIRCH	BASSWOOD	POPLAR
CHERRY	SOFT MAPLE	ELM
RED OAK	WHITE OAK	BEECH

FOR DATA CIRCLE FDM NO. 1863

PRACTICAL FACTS ON THE IDENTIFICATION, STRUCTURE, BEHAVIOR, AND USES OF WOOD

Here are two comprehensive volumes of invaluable help to everyone who works with wood. They provide practical information on a wide variety of topics—from the cambria of trees, through methods of identifying woods, to explanations of adhesives and descriptions of finishes. They offer a thorough understanding of this field, with detailed facts and data on wood structure, defects, properties, behavior, uses, etc.

TEXTBOOK OF WOOD TECHNOLOGY

By H. P. BROWN, A. J. PANSHIN, Assistant Professor of Forestry, Michigan State College, and C. C. FORSAITH, Professor of Wood Technolcgy, New York State College of Forestry.

Vol. 1. Structure, Identification, Defects, and Uses of the Commercial Woods of the United States.

This volume provides practical information on wood anatomy, distinguishing features of various wood species, keys for identification of woods, and much more. The scope of precise data insures a sound, authoritative reference on the structure, identification, major defects, and uses of more than 75 domestic woods. In quick reference form are practical aids that make the identification, inspection, selection, and utilization of woods more accurate.

One section provides information on the strength in bending, shock resistance, working and gluing, qualities, paint holding ability, durability, stiffness, tendency to split, seasoning qualities, etc. of each species. 626 pp., 322 illus., $10.00.

Vol. 11. The Physical, Mechanical, and Chemical Properties of Commercial Woods of the United States.

The data on physical properties covers density of wood and how it varies . . . what moisture does to wood in making it shrink or swell, in changing its weight and compressibility . . . how water acts in wood . . . what heat does to wood, and much more. The section on bonding and finishing describes types of adhesion, aspects of the glue line, seven different wood fasteners, and the many kinds of finishes.

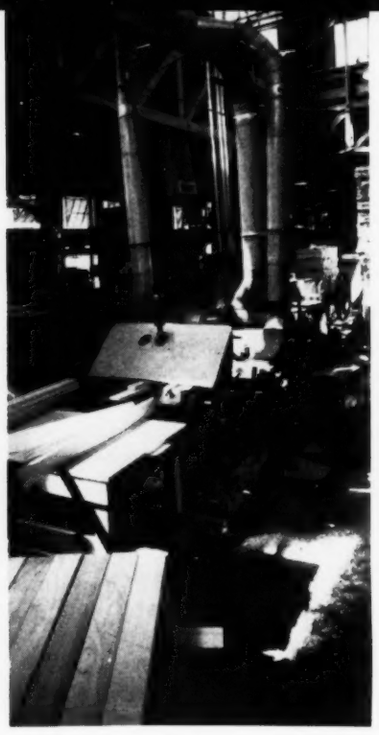
Provided are procedures for finding the mechanical properties of a given wood, and explanation of factors that affect the working stresses of wood. Includes an essential outline of the chemical composition of wood, the chemical action of water, salts, acids, alkalies and oxygen on wood, and the thermal composition of wood. 761 pp., 163 illus., 45 tables, $13.00.

Send check with order to

Book Dept., F. D. M., 608 S. Dearborn
CHICAGO 5, ILLINOIS

Furniture Engineering

A technical section for managers, department heads and technicians



Chapter Three in a book-length feature.

COST FINDING WITH MACHINE HOUR RATES

Manufacturing Costs for Pricing

By Spencer A. Tucker

One of the most important benefits that can be derived from an appropriate knowledge of a company's costs, is the application of this knowledge for pricing purposes. Although in practice prices are affected by many forces over which the manufacturer has little or no control, still a good cost system is the basis for any correct estimating system used for pricing purposes. A company that has an intimate and accurate knowledge of its costs can base its price estimates on a sound foundation that will bring fewer miscalculations as a result. A proper costing system will, in the long run, improve the company's competitive position within the industry.

This may help explain the fact that today trade associations are trying to promote good accounting practices among their members, rather than emphasizing monopolistic activities, such as price fixing, as a means to increase profits.

Costs for Facility Profits

A proper cost system also helps determine which machines or production centers in a plant are the most profitable. This is an important consideration, since it enables management to reflect this profitability in their sales emphasis. The product mix should maximize profits through the optimum use of the production facilities. It is possible that because of inaccurate cost information the sales emphasis may be placed on the less profitable products, thereby altering the economy of the company by misdirecting the sales effort. For example, if a company manufactures a product on expensive facilities, it is essential that the units sold will be enough to justify the maintenance of these facilities. Otherwise, the company will find itself in the position of a poor investor, because the monies liberated by the sales will not provide sufficient return on its investment.

Invariably this also results in the necessity for tying up excessive capital in inventory. Therefore, instead of merchandising the time of his facilities, the manufacturer becomes merchandiser of his raw material inventory, a condition that may well overburden his financial structure.

Costs are also used in decisions involving purchases and manufacture. With the help of a proper cost system, a manufacturer can evaluate the desirability of maintaining or establishing a department as opposed to having these operations performed for him on the outside.

Costs for Optimizing Product Mix

In a multiproduct company, proper costs also help determine which products will be manufactured, due primarily to the profitability with which the facilities can be operated in support of the product mix.

A proper costing system also shows the relationship of profitability of facilities or products in direct relationship to the marketing costs required to promote and sell the product. In addition, costs allow the manufacturer to evaluate the profitability of his sales territories.

Costs for Long-Range Planning

Costs are also essential for the planning of expansions, regardless of whether these expansions are physical or functional in nature. In this instance, proper costs will indicate where and when facilities should be added. If, for example, sales keep a major facility active 90 per cent of

TO PAGE 62

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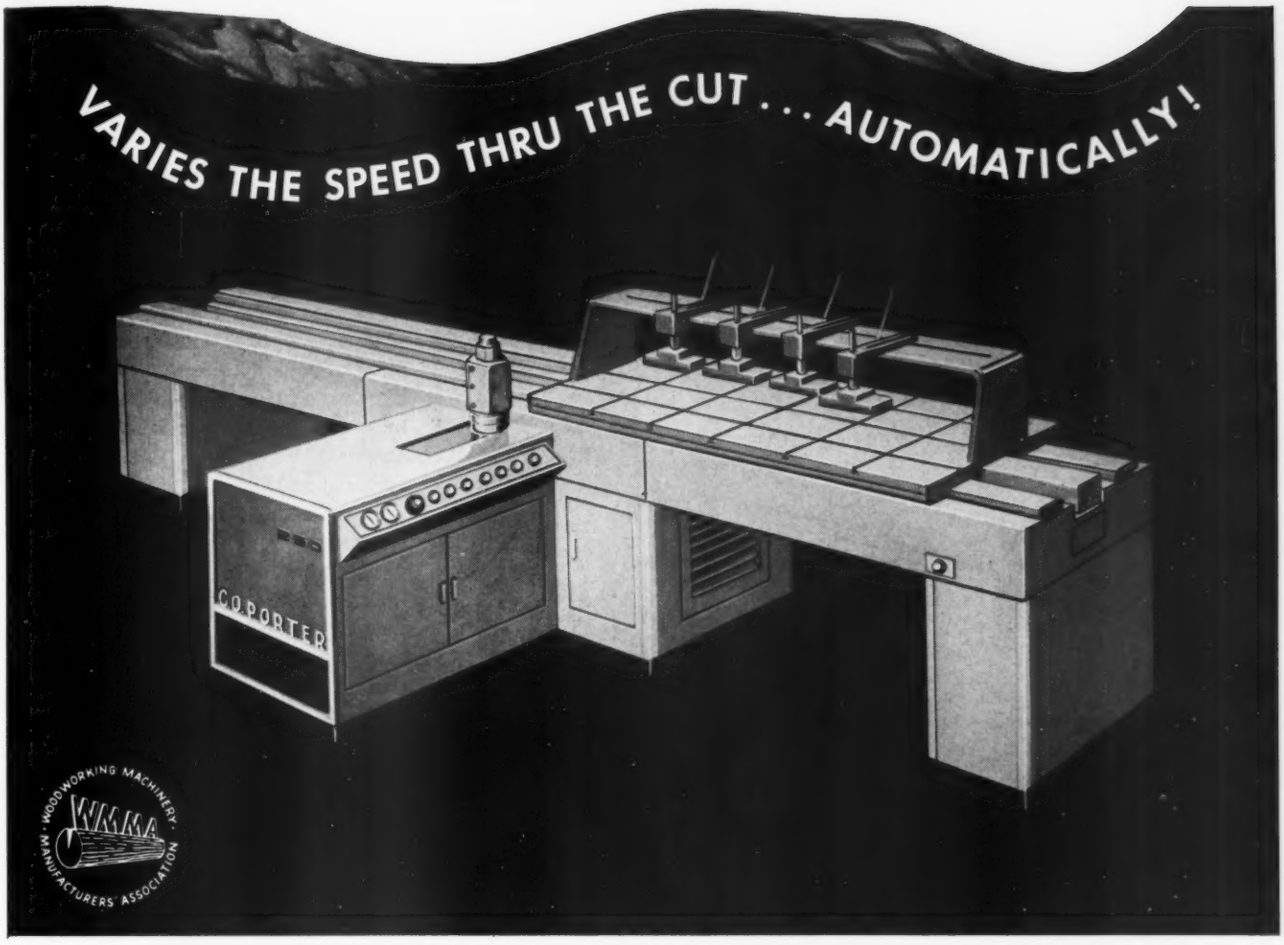
the latest advance in production shaping



PORTER MODEL 250 SHAPEMASTER

- **SELF-CONTAINED HYDRAULIC FEED UNIT**
- **8500 RPM (BELTED DRIVE) CUTTER HEAD SPEED**
- **INFEED VARIABLE FROM 0-45 FPM**
- **RETURN STROKES FROM 0-100 FPM**
- **SIMPLIFIED MAINTENANCE**

The all-new Porter Model 250 Shapemaster provides production efficiency fully as unmatched in the field as its cleanly designed appearance. Its easy adaptability to practically all types of shaper cuts, together with a working capacity to mass-shape stock to fill any production need, makes the demonstration of the Model 250 an important first step in your tooling program.

We invite you to write today to arrange a date to see this evolutionary machine in action. At the same time, watch for other engineering and design improvements from Porter, where the Dividend Designed concept has resulted in better machinery buys for you for over 75 years.

*Remember, **C. O.** is your guarantee of greatest **CO**operation*

C. O. PORTER MACHINERY COMPANY
522 Plymouth Road, N. E., Grand Rapids 5, Michigan

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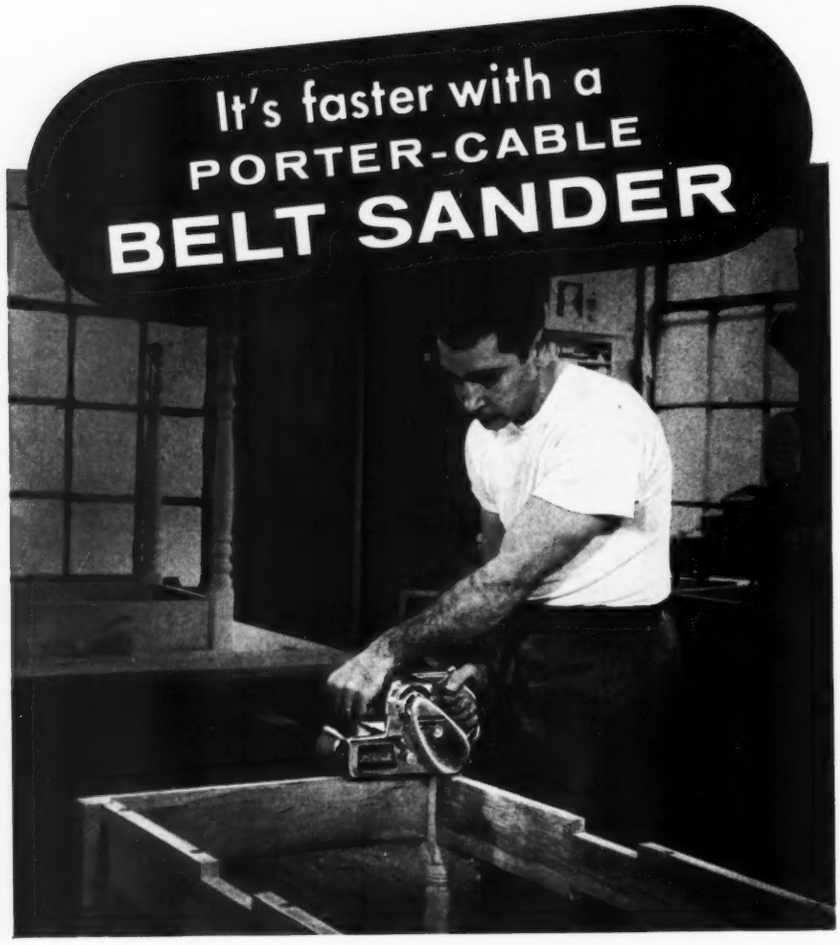


Ball Bearings for All-Day Performance ...light-weight for easy handling

Built for long, trouble-free service, this Porter-Cable Belt Sander has ball and needle bearings throughout and precision spur gears. Exclusive belt tensioning device permits changing belts in seconds. Rubber timing belt assures positive, non-slip drive.

MODEL 153
3" x 21"

See the Model 153 Belt Sander at your Porter-Cable dealer or write for folder describing complete Porter-Cable line

PORTER-CABLE MACHINE COMPANY
1226 Marcellus Street
Syracuse 4, New York

Porter-Cable
Quality Power Tools

FOR DATA CIRCLE FDM NO. 1900

its capacity, the decision to add an additional facility to absorb a new sales drive which will utilize this type of facility, must revolve around the cost of the inactive portion of this duplicated facility. For example, a piece of equipment costing $80,000—is kept active 1,800 out of 2,000 potential hours, and there is no possibility of operating a second shift. A sales drive which requires an additional 1,200 hours of this facility center is anticipated. To support these additional hours, management is faced with the purchase of a second machine at the same acquisition price. The decision that management now has to make, since both facilities operating together will provide 4,000 potential annual hours, is whether the company will make more profit with one machine at 1,800 hours of activity, or with the two machines with 3,000 hours of activity, considering the impact of the cost of the 1,000 hours of inactivity that will be the result of the two-machine operation. Unless management has sufficient cost data on which to base this decision, it is possible that they will fail to take advantage of a market opportunity, or may be committed to an equipment expansion which will limit their future profit elasticity. This means that the company may face greater loss or less profits at a greater sales level.

Traditional Costing

A company that doesn't know the cost of making its own products is like an unguided missile. It may take off but nobody knows where it will land. So it is with cost-estimating systems. A company manufactures products, but if it can't predict in advance the amount of profits it will earn, it must wait until the periodic profit-and-loss statements are published which may then be too late. As far as orders are concerned, this late knowledge of the financial results is certainly too late for useful managerial action.

Yet numerous companies operate on the basis of poor cost information which, of course, is a source of delight to their competitors. That doesn't mean that these companies have poor production methods. It does mean that regardless of their methods or degree of streamlining in their plants and offices, the product costs are not

TO PAGE 69

EXCLUSIVE PICTURE STORY: MODERN NEW FACTORY OF KENLEA CRAFTS, INC.

STORY/PHOTOS BY R. A. HELMERS, EDITOR

Here in five pages of pictures is the industry's newest factory at Kenbridge, Va., a division of 92-year-old David M. Lea & Co.

TO PAGE 64

E. Angus Powell
President

J. P. Gunter
Vice Pres., Marketing

He dedicated new plant in southside Virginia

J. Lindsay Almond, Jr.
Governor of Virginia

C. S. Johnson
Furniture Supt.

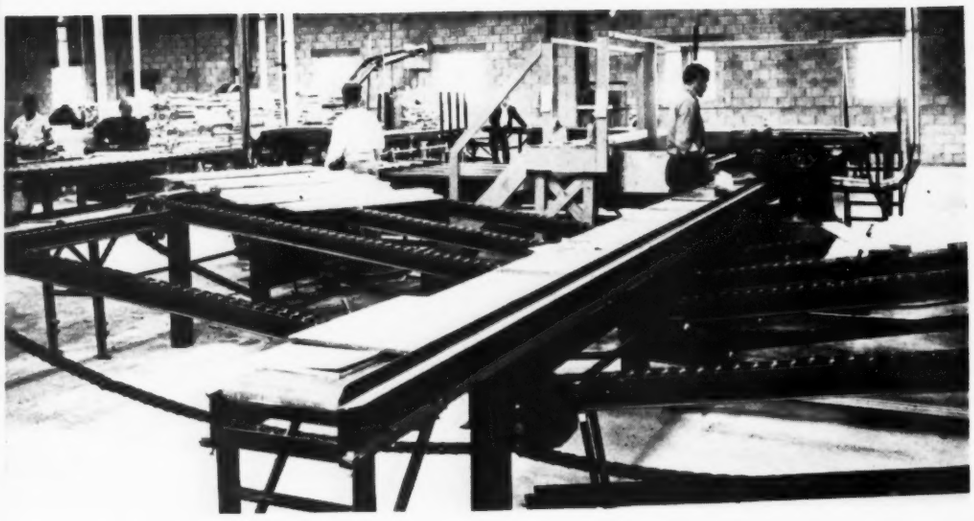
C. A. Gill
Plant Supt.

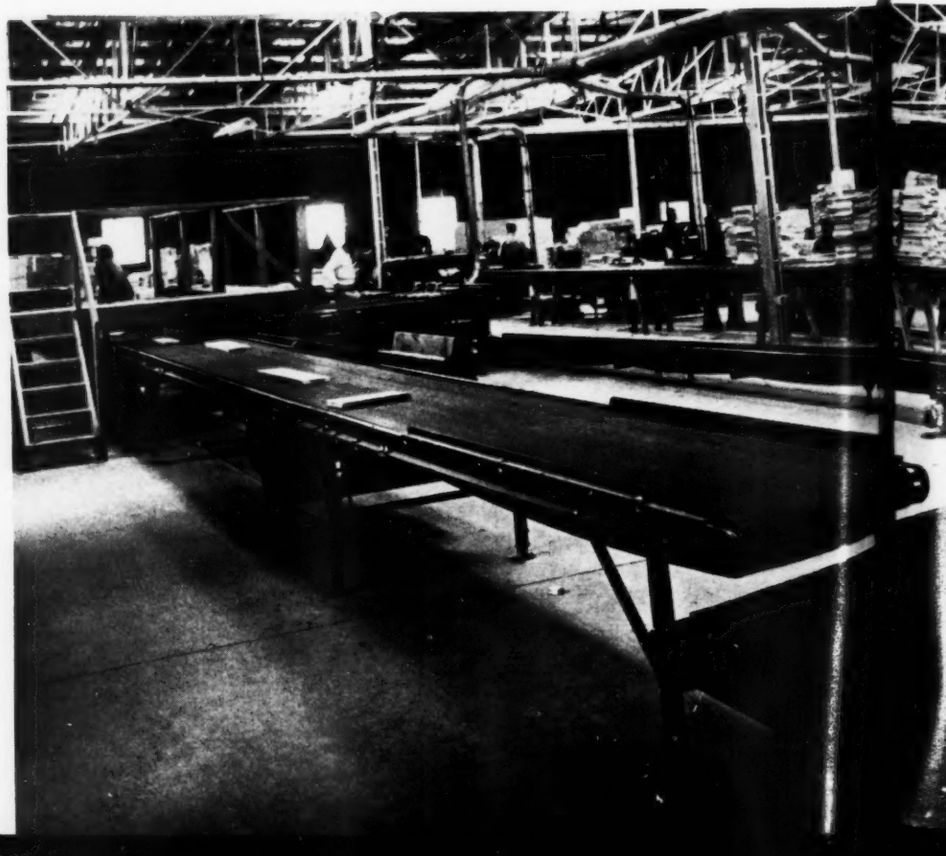
He served as consultant in engineering new factory

E. Sigurd Johnson
Professor
Furniture Manufacturing & Management,
North Carolina State College

Aerial view of 1,120 by 120 ft. Kenlea plant on 70 acre site with own landing strip and rail siding

Coach House collection, a new group designed by Gordon Perlmutter for Kenlea



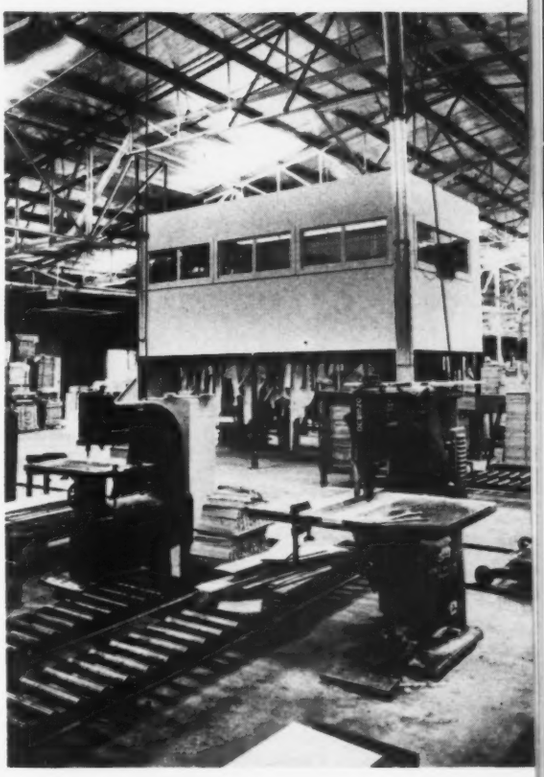


PRECISION WOODWORKING EQUIPMENT, EFFICIENT LAYOUT, AT NEW

KENLEA PLANT

The structure which houses the new Kenlea manufacturing facilities was made possible through a notable program of community self-help. Leaders in Lunenburg County, which was largely dependent on a farming economy, organized Kenbridge Industries, Inc. Through its efforts David M. Lea & Co. was attracted to locate in the area. A building fund of $710,000 was raised, of which $260,000 of debentures were purchased by local citizens. At its dedication in mid-April 100 persons were employed. Eventually employment is expected to reach 250. Early American and French Provincial bedroom and dining room furniture are made here. Construction features include dust panels, center guided drawers, antiqued brass hardware, woven cane panels, and precision machining and joinery. Kiln dried is transported from the Richmond plant, otherwise the Kenbridge plant is completely self-sustaining. Production spokesmen for the company estimate that the plant will have a capacity of 1,000 pieces of furniture a day.

TO PAGE 66



Opposite page, clockwise from top: S. A. Woods moulder is one of several such machines at Kenlea plant. Roller conveyors are used for stock transfer and storage. Four Diehl rip saws are fed cut stock by waist-high roller conveyors; waste material is removed by belt conveyor below saw table. Chain conveyors move rough kiln-dried lumber to Diehl cut-off saws for easy handling by sawyers.

Right, this page, top to bottom: Production management has elevated headquarters from which to view plant operations. Routers in foreground are Onsrud. B. M. Root multiple boring machine is representative of modern equipment in Kenlea's machining department.

Bottom, both pages: Panoramic view of conveyor system that moves stock from cut-off saws to sorting turntable. Equipment was supplied by Moore Dry Kiln Co.

GLUING, SANDING OPERATIONS AT

KENLEA PLANT

David M. Lea & Co., parent organization, also operates a plywood and lumber mill at Windsor, N. C., and a veneer plant at Elizabeth City, N. C., in addition to its Richmond furniture plant.

TO PAGE 68

Clockwise, from upper left: Bed parts ready for assembly at Kenlea. Edge-glued stock is assembled on Billstrom clamps; company also used electronic gluing machines. Perkins is glue supplier. Heesemann automatic sander is used to finish panels. Duo-Fast stapler nailer is used in combination with glue in assembling case pieces. Yates-American triple drum sander gives smooth finish to furniture parts.

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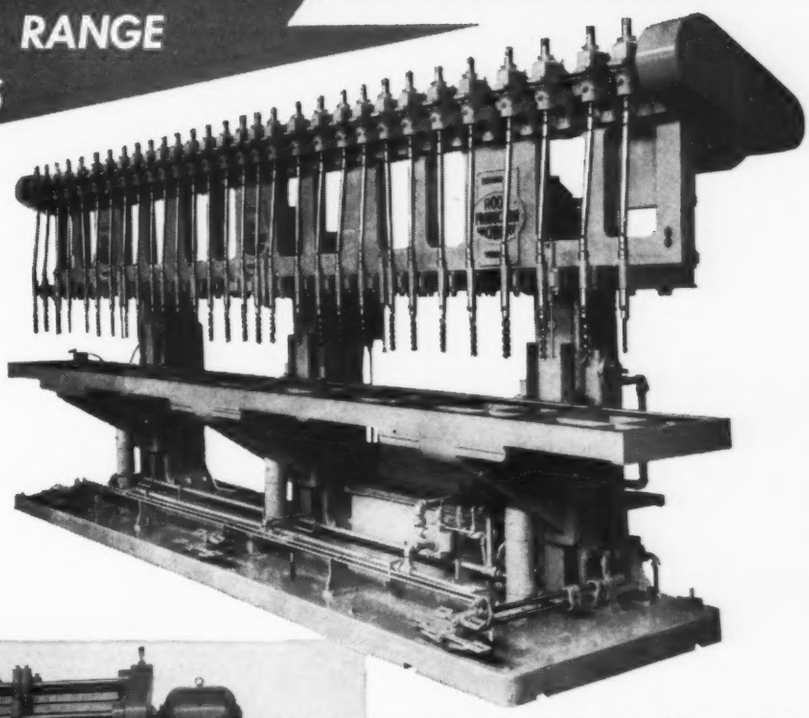
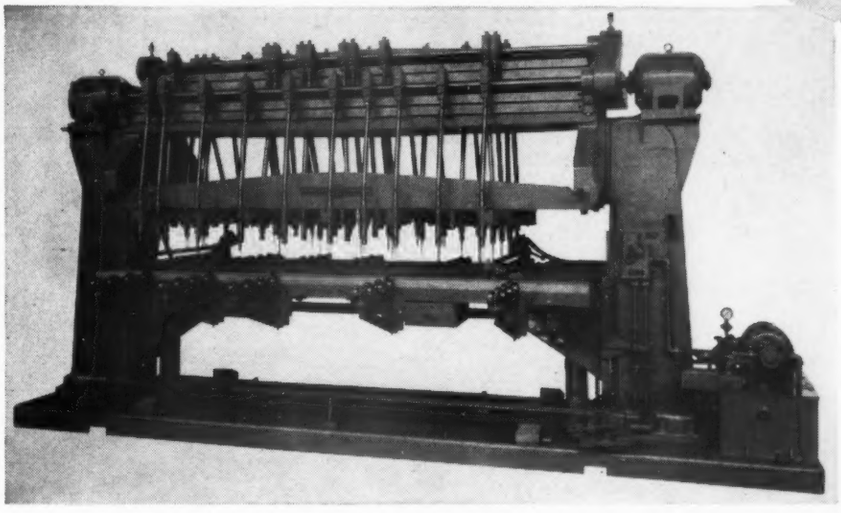


Above:- Style CCCH Triple Column Multiple Borer, 18 ft. to 24 ft. capacity, up to 48 universally adjustable spindles for in-line or staggered boring, with 12" cross line spindle adjustment.



Left:- Style 2CXH-S4 Multiple Borer for large area boring, 40 universally adjustable spindles, roller feed brackets extend from both sides of table, handles panels up to 10 ft. by 4 ft.

Shown here are just three from our complete line of Multiple Boring Machines. If you have a multiple boring job, simple or intricate, there's a Root machine designed and engineered to give you maximum production at the lowest operating cost. Root Borers feature hydraulic feed, are easily adjustable for quick set-ups, and provide the answer to many production problems through their unusual versatility.

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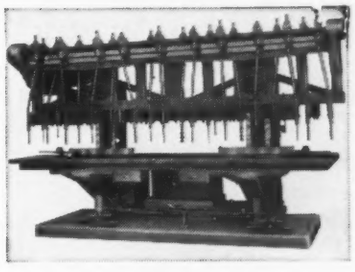

Style CCXH Multiple Borer, 8 ft. to 16 ft. capacity, up to 36 universally adjustable spindles for in-line or out-of-line hole pattern boring, with 22" cross line spindle adjustment.

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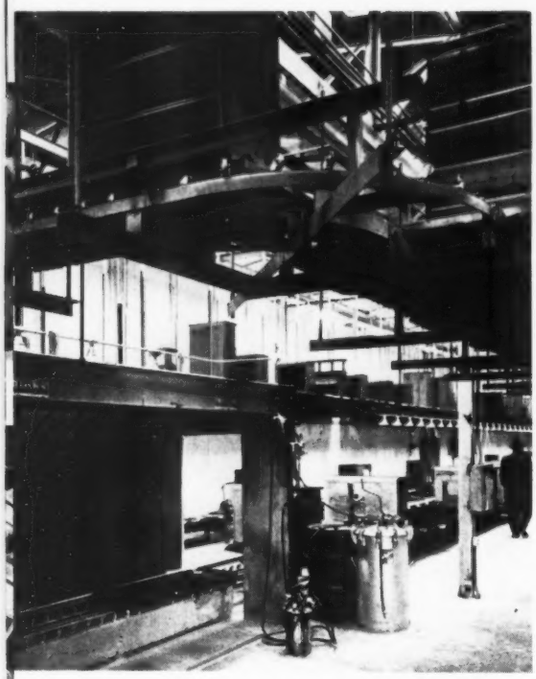
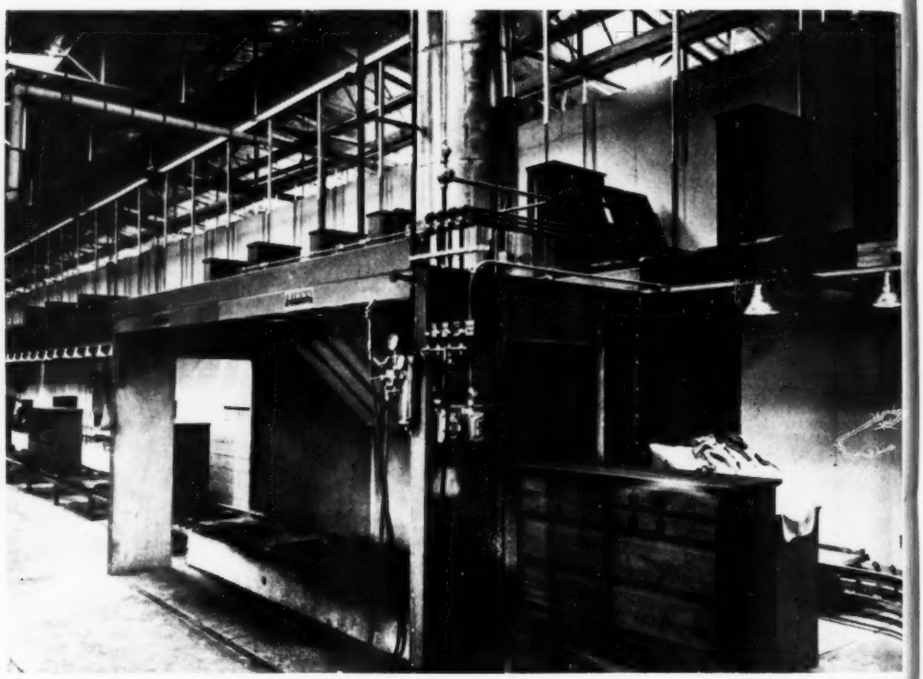
B. M. ROOT CO.
YORK, PENNSYLVANIA

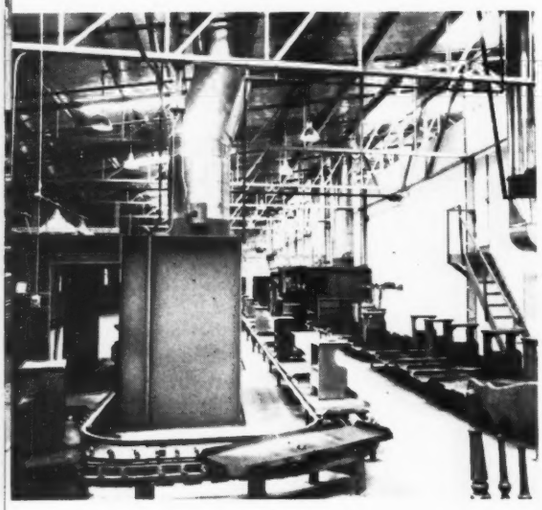
FOR DATA CIRCLE FDM NO. 1903

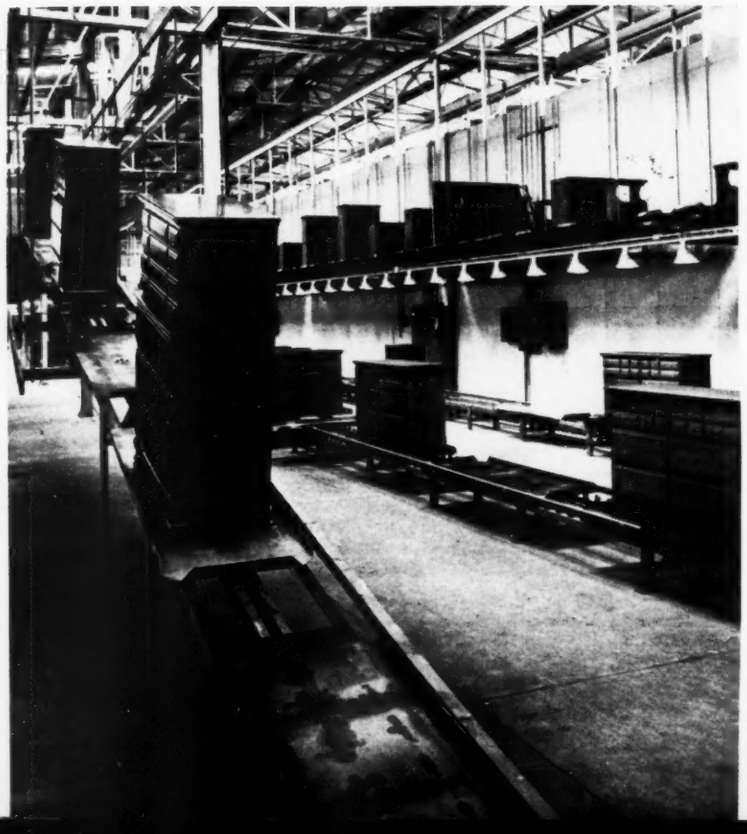
FINISHING SYSTEM IS PRIDE OF KENLEA PLANT

Wide assortment of furniture pieces in the Kenlea line: ox-bow headboards, bookcase headboards, tall chests, nite stands, chests, dressers, hutches, seating pieces, many with turned parts and irregular surfaces, required a finishing system with flexibility. DeBurgh finishing conveyor system, supplied by George Koch Sons, was chosen. Spray booths, tanks and accessories were supplied by Binks, spray guns by DeVilbiss. ■









Pictured on this page are several views of the finishing system. Note how space is conserved by running conveyor to upper level.

SIMMONS PLANT
FROM PAGE 41

"The plant work force is about 50 per cent men and 50 per cent women. We find in many jobs–particularly detail, or exacting repetitive tasks–women actually do a better job than men. Often small details, which go into making higher quality products, are consistently done more carefully by women employees. We hire women for such operations as paint spraying, light sub-assembly work, brazing and mattress coil assembly, for example. Generally, they have more patience with these jobs," manager L. H. Weyrough said.

Simmons' National Technological Center, located in the Munster plant, is responsible for research, testing and development of new products and production equipment and methods at all Simmons plants. Here laboratory supervisor, Chester Schincke, puts experimental products through torture tests that have earned him the nickname "Doctor of Destruction" around the plant.

Mattresses are subjected to rolling 200 lb. weights on the Juggernaut testing machine to simulate thousands of nights of consumer tossing and turning. The Squirming Ermma reproduces the effects of edge bed sitters, and compression testers can measure what happens when a cushion is depressed a million times. These are only a few of the tests Simmons products undergo before a production okay is given. Every item from fabrics to automated hospital bed electric motors are tested for service and reliability by the Technological Center.–*Alfred DeBat*

Next month, FDM will conclude its visit to Simmons Co.'s Munster plant with a report of the company's hard goods division.

COSTS FOR PRICING
FROM PAGE 62

an effective guide to their pricing, as well as other decisions.

The Big Problem

The key to the cost-estimating puzzle lies in the allocation of the overhead costs to the product. And this will be discussed in greater detail in later chapters. As we have said earlier, the apportioning of direct materials and direct labor costs to the product is fairly routine because they can be identified. That is, you *can see* the material that goes into a product and by tracing a product through its manufacturing process you *can see* what labor it took to produce it. From this point on, simple records will give the materials and labor costs.

We are up against a much bigger problem when it comes to adding an amount of cost to the labor and materials costs to account for the overhead expenses, because as we have said earlier, overhead costs are not directly identifiable with specific products. You *can't see* the piece of the manager's salary in the product, nor the machine's depreciation expense, nor the cost of the material handlers who came in contact with the product.

Therefore, over the years myriad formulas cropped up, each claiming an ability to allocate to products a proper share of overhead expenses. Cost-finding became hampered by unnecessary complications and illogical theories. Shortcuts, formulas, magic numbers, factors and percentages confused the cost-finding process and generated tons of paperwork to justify the method selected. So often these methods arose out of a need for quick quotations and many managements never recognized product costing as a science. Once the idea of the magic number became implanted, it was hard to pry loose. It became even more difficult to do when owners pointed to a profit figure on a profit-and-loss statement as proof of their judgment in applying overhead. Even today, a large part of the discussion at local trade association meetings revolves around overhead formulas. This practice is tantamount to swapping medical prescriptions. What is fine for one may be poison for another.

Unfortunately, the use of the magic number *doesn't* find costs, it *forces* them. Overhead gets spread with a bulldozer, filling in holes and leveling peaks. Management is victimized by their current shortcut formula and alternately rides the peaks of profit and loss as their overhead formula approaches or departs from actual costs.

Traditional Costing Methods

Outlined below are a few of the more commonly-used systems for allocating overhead to the product. In common to all of them is the use of a ratio or percentage. This percentage is related to one or more cost factors depending on the particular method.

Prime Cost Method Under this method, the overhead is added to the production order on a percentage basis. The rate percent is determined by the ratio of the total overhead of the cost period, usually a profit-and-loss reporting period, to the total prime cost of the products manufactured during the cost period. Thus, if the total materials cost during the cost period is $500,000, the total labor cost $300,000 and the total overhead costs amount to $400,000, the rate is 50 per cent. (Overhead is one-half of prime cost = materials + direct labor costs).

This method is simple, conveniently developed, and easy to use. An estimator is given a per cent rate and after he sums up labor and materials on his estimating sheet, he adds on overhead by taking this percentage of the total.

The disadvantages though are serious. For one thing there is no sensible relation between overhead expense and the amount of raw materials used. Raw material can be very high and the cost of facilities used to manufacture the product made from this material may be very low and so the product becomes overloaded with overhead expense because of its inherently high material-cost content. Naturally, the reverse is also true. The product may consume little in materials cost but may require very expensive equipment in its manufacture, leaving it shy of sufficient overhead-expense loading.

Exactly the same thing is true concerning the relationship between overhead expense and direct labor costs. It is perfectly possible for low labor items to require massive overhead expense support and vice versa.

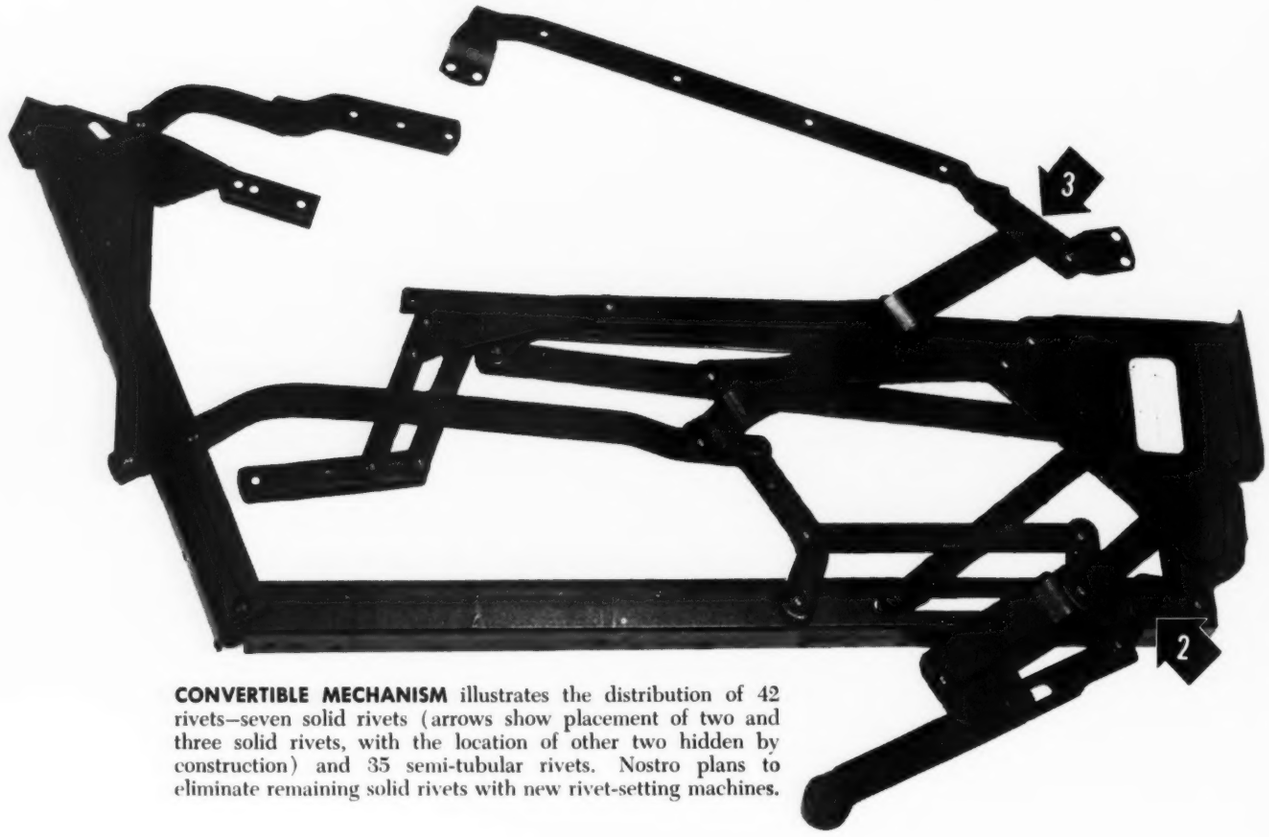
And when the reader considers that in the usual multi-product company, products contain varying amounts of direct labor and materials cost, it is unlikely that this fixed per cent rate will equitably distribute overhead expense to all.

Materials Cost Method Under this method, the overhead expense is added to the order cost as a percentage of the materials cost. Thus if the total materials cost for a cost period is $500,000 and the total overhead cost amounts to $400,000, the rate is 80 per cent.

This method is also simple to de-

TO PAGE 74

Automatic Riveting Cuts Cost of Convertible Mechanisms



CONVERTIBLE MECHANISM illustrates the distribution of 42 rivets—seven solid rivets (arrows show placement of two and three solid rivets, with the location of other two hidden by construction) and 35 semi-tubular rivets. Nostro plans to eliminate remaining solid rivets with new rivet-setting machines.

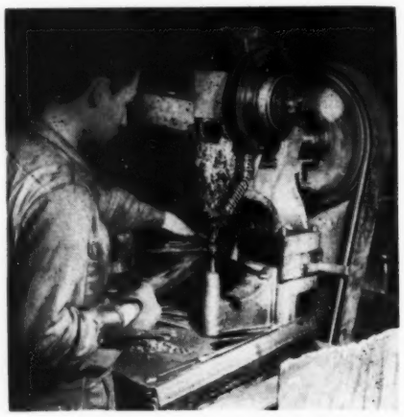
By J. J. Barabas, Production Manager, and J. A. Brindisi, Assistant Production Manager,

Nostro Manufacturing Corp. New Hyde Park, New York

The constant search for reduced production cost at equal or better quality is nowhere more intense than in the highly competitive convertible furniture industry. The constant increase in hourly rates forces most manufacturers to seek automatic production methods which will make more efficient use of available labor.

At Nostro Manufacturing, a division of Castro Convertibles, the most effective step in increasing of labor productivity has been in converting from manual riveting to semi-automatic machine riveting in assembly of complex convertible furniture pivot mechanisms.

By changing gradually from solid rivets to semi-tubular rivets over the last eight years, Nostro has been able to shift to higher-speed machine riveting with an actual improvement in the quality of both stationary and pivot joints. As a result, there has been an estimated 35 per cent reduction in the labor cost for each side assembly of the convertible mechanism, which is about 80 per cent of the total output of the assembly department.



RIVET SETTING sometimes requires operators to place spacers at necessary pivot points to insure proper alignment of all components.

The assembly department produces pivot mechanisms for Castro ottomans, recliners and hi-risers, as well as the larger-volume convertible sofa mechanism. Side assemblies for soft convertible mechanisms, which are produced annually in huge volumes are joined in pairs to the ends of longitudinal frame members to form the complete sofa convertible mechanism.

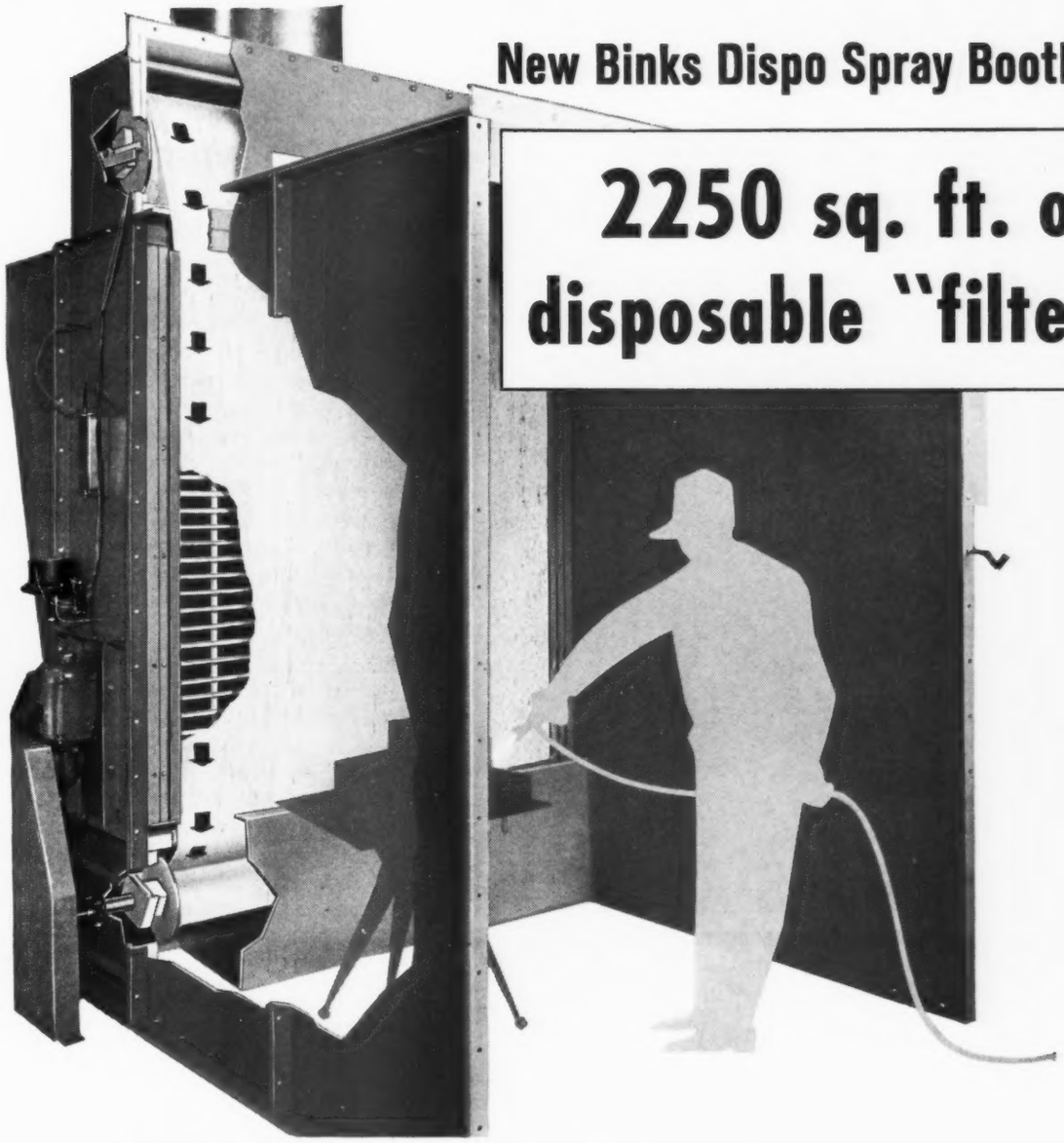
In considering machine setting of solid rivets, the various solid-rivet machines then available seemed to produce excessive variation in clearances at pivot joints in setting the solid rivets in place, many joints either froze or were too loose. Therefore in order to maintain a free but stable joint, it was felt that solid rivets would have to be set by hand.

The improvements in both quality and production rate that would be

TO PAGE 72

New Binks Dispo Spray Booth has...

2250 sq. ft. of disposable "filters"



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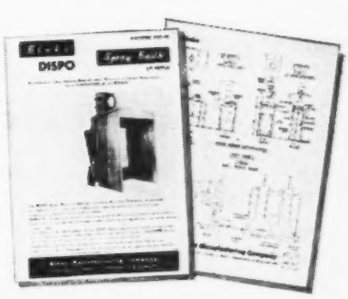

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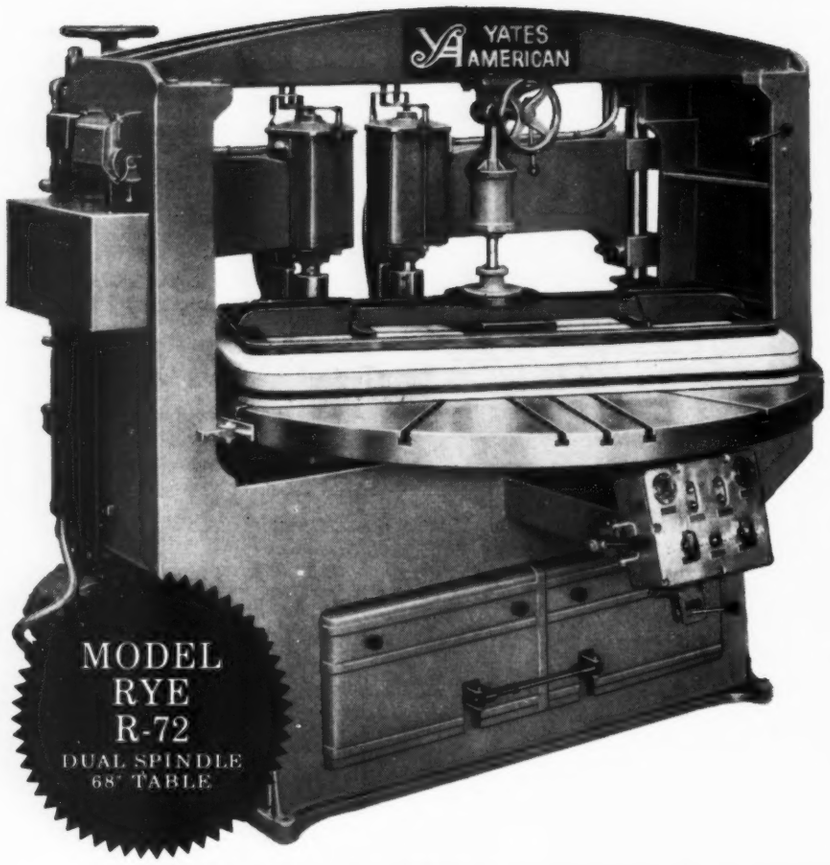

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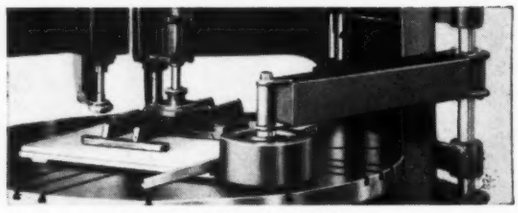

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SINCE 1883—THE FINEST IN WOODWORKING EQUIPMENT

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achieved by changing over to semi-tubular rivets were then reviewed with fastener specialists from Milford Rivet & Machine Co., Milford, Conn. Test production runs showed that it would be possible to produce high-quality pivot joints, as well as the many stationary joints, at far higher assembly rates with machine-set semi-tubular rivets.

Although the side assembly is a complicated structure of bars and pivots, it has been possible to standardize extensively on its various components. The strip stock for example, is hot-rolled, high-carbon steel in four sizes—1 in. by ¼ in., 1¼ in. by ¼ in., 1 in. by ⅜ in., and ⅞ in. by 3/16 in. Many longer frame members are formed out of 1½ in. by 1½ in. steel angle stock. Even though there are a number of multiple-pivot points and interlocking joints in the side assembly, only four rivet sizes are being used in either ¼ in. or 5/16 in. diameters. The number of different rivet lengths and diameters were minimized by making slight changes in the original design of the side assembly and by using spacers at pivots wh rever necessary to provide the right "pile-up" so that each pivot lies in the correct plane.

By thus standardizing as much as possible on rivet sizes and by carefully planning the assembly procedure, most of the 24 semi-tubular rivet-setting machines now in operation are used for only one rivet size.

The following table summarizes five of the 10 assembly operations on the side assembly. Sixteen of 35 semi-tubular rivets in the side assembly are machine-set in these five operations.

Assembly Operation	Fig. No.	Number of Rivets	Size of Rivets	Assembly Rate operations/hr
L-bracket on angle frame arm	4	2	¼" dia. ⅜" long	375
Caster wheel on leg end	5	1	¼" dia. 1 1/16" long	400
Pivot arm on frame bar	6	3 in two operations	Shoulder ⅜" dia. x ½" 5/16" dia. x ½"	250-one 175-two
Pivot brackets overlapped on arms	7	5	¼" dia. 9/16" long	144
Side assembly completed	8	5	5/16" dia. 23/32" long	32

Note that the assembly rates given cover the complete handling and riveting operations at the rivet-setting machines involved. Although the speed

of the actual rivet-setting operation is inherently far higher than the assembly rate given for each, the overall rate at which a particular rivet or group of rivets is set by an operator at a particular machine is far more important in evaluating production methods. Each of these assembly operations includes (1) picking up the pieces to be riveted from adjacent stacks or bins, (2) placing them in the proper position under the riveting head, (3) depressing the foot pedal to operate the rivet-setting machine, (4) inspecting the joint, and (5) placing the assembly in another stack in preparation for transfer to the next operation.

The increase in the assembly rate for riveting the pivot arm on the frame bar indicates how it was possible to achieve the 35 per cent reduction in labor cost for each side assembly. The three identical semi-tubular shoulder rivets now applied in two operations have replaced three solid rivets of two sizes that were once set manually. The present assembly rates of 250 operations per hour for one rivet and 175 operations per hour for the two rivets provide an overall operation that is about 3.75 times faster than the original solid-rivet operation.

While shoulder rivets are still being used at three pivot points, the uniformity of the machine setting is such that straight-shank semi-tubular rivets provide a stable, free joint at all other pivot points. A free joint is insured at Nostro by specifying as standard procedure an unusually large clince allowance on the semi-tubular rivets. Even though the thickness variation in the strip stock is relatively large, there is thus no problem with quality of the joint. The clince of "turn-over" allowance—the amount of rivet length cleared for rolling over against the material—is 3/16 in. on ¼ in. rivets and 7/32 in. on 5/16 in. rivets, whatever their lengths.

All semi-tubular setting machines are operated almost continuously nine and a half hours per day (including average overtime). The Milford machines, for example, have operated on this schedule with very little maintenance for the last five years. The only maintenance required is that the anvils of the rivet-setting machines must be resurfaced periodically because of extremely severe abrasion by combined mill dust or steel powder and grease on hot-rolled strip material.

—*J. A. Brindisi and J. J. Barabas.*

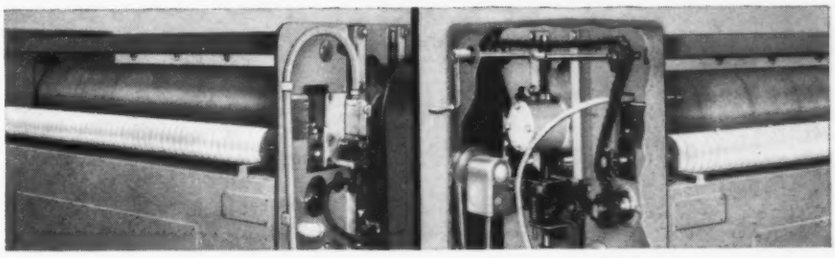
CUT YOUR FINISHING COSTS

NEW
NEW
NEW

WITH THE S-101 POLISHER

Smoother finishes attained faster and more economically reduce your finishing costs and improve product quality. These benefits are yours with the new low-cost Yates-American Model S-101 Polisher incorporating up-to-the-minute design, top quality, and performance . . . and utilizing the latest developments in abrasives.

Complete control over production speed and finish is achieved with infinitely adjustable oscillating drum (from 0 to 200 per minute), adjustable feed (from 20 to 60 F.P.M.), and automatically compensated speed for the abrasive wheel-drum. Quick change polishing drum and built-in dresser makes it easy to keep machine operating at top performance . . . and an automatic sensing device for the abrasive-to-stock contact eliminates dubbing of the stock. Find out now how the Model S-101 applies to your production requirements!



Quick change polishing drum—is easily removed for changing grade and renewing the abrasive. Its over-the-stock position provides fast, easy quality control.

Infinitely variable feed from 20 to 60 F.P.M. with positive drive on all rolls permits selection to attain maximum production speed . . . and at the same time, produce top quality smooth finishes.

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741 4th STREET, BELOIT, WISCONSIN

SINCE 1883—THE FINEST IN WOODWORKING EQUIPMENT

FOR DATA CIRCLE FDM NO. 1918

COSTS FOR PRICING
FROM PAGE 69

velop and apply, but except where used in very special cases, it will widely distort the distribution of overhead expenses as discussed in the foregoing method. This method, while still a convenient compromise compared to the machine-hour rate method, can be applied to bulk materials industries such as forgings, cement, sugar, paint, bread and the like. However, it can be applied only on a weight instead of a dollar basis.

For example, if a brass foundry produces 800,000 pounds of castings per month of uniform style and weight and the overhead expenses for the month are $80,000, the overhead per pound is 10 cents. Thus the overhead expense estimate for a casting weighing five pounds would be 50 cents. If, however, the foundry's products are *not* uniform and produces a variety of castings which vary in weight, shape and style requiring all manner of coremaking, then this method becomes inequitable. Under this circumstance, the simple, but heavy weight casting will be overpriced due to excessively allocated overhead and the foundry will lose this type of business. On the other hand, the complex but light casting will be underpriced because of the insufficient overhead allocated and will attract brisk sales activity, but not sufficient profits.

Some bulk product plants have refined this method by subdividing their overhead expenses according to types or classes of castings. The paperwork and fine dividing lines required to support this modification of the basic system is not worth the effort especially if one compares it to the similar effort required to develop and maintain a machine-hour rate system which has the further advantage of being equitable and fully logical.

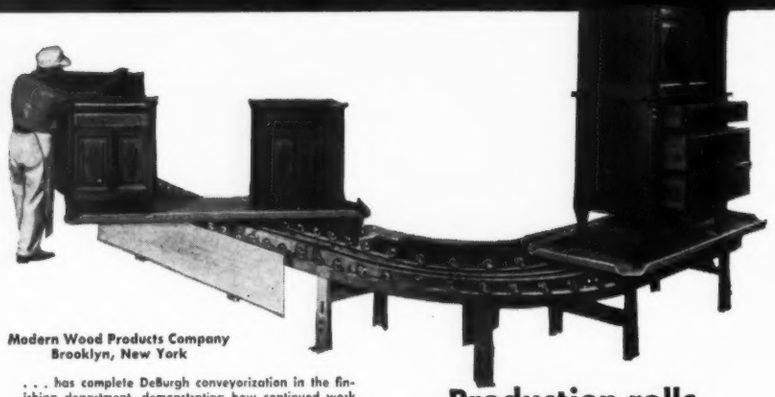
Direct Labor Dollar Method With this method the overhead expenses are added to the order cost as a percentage of the direct labor cost. Thus if the total direct labor costs in a period amount to $300,000 and the overhead expenses are $400,000, the rate is 133 per cent.

Rarely, is the direct-labor dollar method equitable for distributing overhead to products. The type of plant in which some resemblance of equity is found is one in which the operations and rates of worker's pay are uniform and the type of equipment they all operate is similar. Further, to make this method valid, the class of work and type of product involved would have to be very much alike. Hand-work or non-machine industries are the safest for this method.

In a furniture company that makes both upholstered pieces as well as highly polished tables, the total overhead rate amounted to 90 per cent. Developing rates for each of the major departments resulted in the following rates: Mill department, 80 per cent, cabinet making, 95 per cent, finishing, 76 per cent, upholstering, 72 per cent, packing 91 per cent. In a metalworking plant which had used an overall overhead rate of 190 per cent, the departmental rates were: punch presses 370 per cent, drill presses 216 per cent, small lathes 210 per cent, automatic lathes 476 per cent, hand assembly 142 per cent.

To sum up, the disadvantages of this method are: it does not consider the cost value of the product made by services other than direct labor, *viz:* machinery. In some departments and

DE BURGH CONVEYORIZED FINISHING SYSTEMS

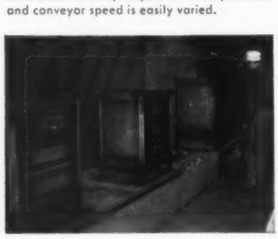


Modern Wood Products Company
Brooklyn, New York

. . . has complete DeBurgh conveyorization in the finishing department, demonstrating how continued work areas can be utilized to full furniture production.

Production rolls through tight areas to meet tight schedules

Convenient take-up adjustments are provided and conveyor speed is easily varied.



Pallets may be rotated freely along the line and are automatically aligned for certain finishing operations.

FLEXIBLE
DeBurgh Systems will fit the most complex floor layout. Conveyor speed is easily controlled.

CUT LABOR COSTS 50%
Patented features of the DeBurgh System allow fewer employees to do more work in less time.

35% LESS FLOOR SPACE
The "close pack" and "cycle system" features permit double use of floor area.

INCREASE PRODUCTION
No time lost between operations. Labor force is kept productively occupied.

LESS FATIGUE FOR LABOR
Production is delivered to the workmen at proper height and position on a firm, rotatable platform . . . no pulling, no lifting, no shoving.

ECONOMICAL
Investment in a DeBurgh System can be amortized in 10-15 months . . . can be installed or altered by your own maintenance crew.

Small plants and large industries alike use the distinct advantages of the DeBurgh Conveyor to increase their production and their profit. DeBurgh Systems will handle many types of products at one time . . . a fully powered system it negotiates horizontal and vertical curves with ease. It speeds up or slows down easily. There are no dead areas along the line. The DeBurgh System is working for you all the time. And it works for your workers, too!

PHONE WIRE OR WRITE!
Without obligation, our engineers will make an expert appraisal of your finishing system requirements.

GEORGE KOCH SONS, INC.
EVANSVILLE 4, INDIANA

FOR DATA CIRCLE FDM NO. 1883

for some products, expensive facilities constitute the largest cost element. It assigns overhead based on the dollar which may not be a true measure of cost since many overhead expenses such as taxes, insurance, depreciation, etc., are functions of time. Finally, it penalizes operations performed by high-priced workers with proportionately more overhead than those operations performed by lower-rate operators. This means inequitable allocation of overhead to the product where two or more operators do the same operation on different jobs or product groups, but are paid varying rates per hour. Worst of all, it deprives the owners of the enterprise from a consistent recovery of monies invested in productive facilities, since the criterion of large recovery in this method is the existence of a sizeable direct-labor content in the product's sales dollar. This direct-labor content may or may not have been produced on the expensive facilities.

Direct Labor Hour Method This method is similar to the previous one but includes one refinement. It is based on the assumption that overhead expense is a function of time and therefore products should carry overhead in direct proportion to the time of the *direct labor* employed to produce it. What may baffle the conscientious but inexperienced investigator is the fact that this method deals with time and is therefore much more equitable since overhead expenses also are incurred with time.

Such is not the case. For if the products, facilities, and labor skills vary widely, no average overhead cost per direct labor hour will be indicative of the actual overhead of any department or product and is therefore, practically as illogical as the previously mentioned labor-dollar method.

Unit of Product Method This is the method whereby the overhead expenses are divided by the number of product units manufactured in a cost period. Thus, in a period where the number of assemblies total 10,000 and the overhead expenses $50,000, the overhead cost per assembly is $5.

Obviously, this is the most direct method for obtaining the overhead component of product cost since the product itself determines the amount of the overhead expense. However, this method has severe limitations and can only be used where one product is made or where products are few, closely related and have some common denominator like weight or volume. Examples of industries where the use of this method may be considered safe, but still not logical, are the shoe industry and the mattress industry where the size is standard and the grades held fairly closely.

Conceptually, it is easy to understand that the use of any of these percentages developed from previous data immediately imply that the coming period in which the rate will be used will be exactly the same as the period from which the rate was drawn. That assumes that the same products will be made, in the same quantities; that the same facilities will be used for the same length of time; that labor, material and overhead expenses will be the same; that the expenses used in the conduct of the business will be the same, etc. Obviously, the plant that uses these types of systems where no logical relationship exists between the overhead expenses and the base on which it is allocated is taking an exercise in faith and chance.

—Spencer A. Tucker

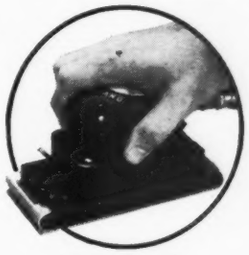
SUNDSTRAND ELECTRIC SANDER

high performance • low maintenance

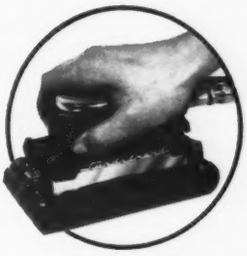
smooth, rapid operation

No brushes . . . no commutator . . . no belts . . . no gears . . . means fewer moving parts, less noise and minimum maintenance. *Fast* on stock removal with its big 4½″ x 11″ pad, 3500-rpm speed, and 13/64″ orbital action. *Easy* on the operator because it's light, quiet, and smooth running. *Never before* an electric sander like the *Sundstrand Model OE-900*. Companion to the 50-year leading line of Sundstrand air-powered sanders. Write today for new Bulletin OE-900.

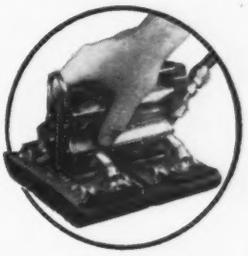
AIR SANDERS AVAILABLE FROM SUNDSTRAND



SINGLE-PAD OSCILLATING AIR SANDERS



SINGLE-PAD STRAIGHT-LINE AIR SANDER



TWO-PAD STRAIGHT-LINE AIR SANDERS

SUNDSTRAND MACHINE TOOL

BELVIDERE, ILLINOIS

Division of SUNDSTRAND CORPORATION

FOR DATA CIRCLE FDM NO. 1910

MEASURMATIC lumber sorter uses electro-pneumatic measuring stations to automatically sort boards at lineal speeds as high as 600 f.p.m. in both length and width separations.

Measurmatic Lumber Sorter Speeds Board Handling

A lumber sorting machine, which automatically sizes boards and allows workers to process four times more lumber, has been licensed for manufacture to the Moore Dry Kiln Co., Jacksonville, Fla.

The Measurmatic sorter was developed by consulting engineer H. E. Bovary, Jr., of Houston, and Arthur Temple, Jr., president of Southern Pine Lumber Co., at Diboll, Texas. The first full-scale machine was built at Southern Pine, and provided 27 separations of lumber with four men operating the machine and conveying lumber to the next production point.

Measurmatic sorters are now operating at Kirby Lumber Corp., Silsbee, Texas; Olin Mathieson Chemical Corp., Huttig, Ark., and Ozan Lumber Co., Prescott, Ark. At one of these mills four men now sort and process the volume of lumber previously handled by 16 to 20 men.

The sorting operation begins when a "feeder" man starts each successive board on a conveyor and it is automatically kicked off into a mechanized accumulation bay according to its length. All boards are fed from the same point alongside the sorter. "As lumber in most modern mills is kiln dried and must be carefully stacked according to length and thicknesses for the drying operation, the Measurmatic sorter provides a highly effective tool for processing the lumber between the sawmill and the dry kilns," Bovary said.

In all Measurmatic sorter installations to date, the sorter is housed in a covered building and this provides important protection to the lumber while in process. Further advantages lie in having the lumber stored temporarily in mechanized accumulation bays; this provides a surge point in the production line (minimizing the bad effects of a breakdown in either the preceding or following operations), and allows a ready point for observation of the "in-process" product that will in a few days' time be received by the remanufacturing and planing units in the typical mill. Production can thus better be scheduled, the inventors reported.

The Measurmatic sorter is designed for high-speed operation—600 to 700 f.p.m. board travel, and production rates from 100,000 to 250,000 bd. ft. per day. Not only do manual labor and manpower savings result, but its use offsets the necessity of maintaining and operating separate powered lumber moving vehicles and the roads and runways which must be provided for them.

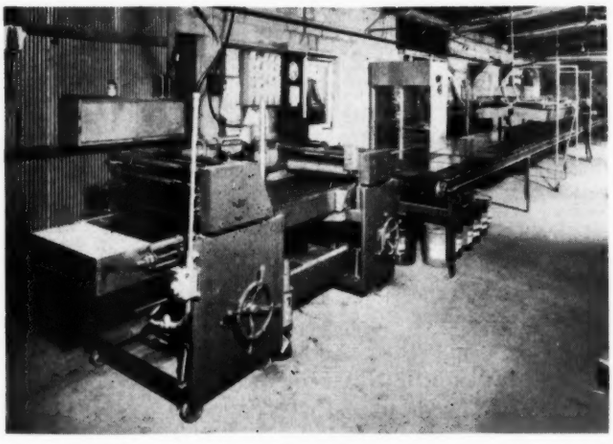
The system is designed and engineered, reported the manufacturer Moore Dry Kiln Co., for automatic sorting of length through electro-pneumatic measuring stations. The Measurmatic is ideally suited for automatic width sorting as boards move endways on edge. The operator at the feed station can make basic separation of thickness or grade while length and width separation are handled by the machine. Hinged baffles cushion the fall and straighten boards for parallel piling in bays. ■

A complete, easy-to-read guide for grinding all types of cutting blades, with information on angles, wood structures, etc. Written for the operator as well as the woodworking superintendent and foreman.

KNIFE GRINDING AND WOODWORKING MANUAL

by Charles G. Monnett, Jr.

Paper bound, 10 x 11 in. 167 pages—187 illustrations. $5.35 per copy, postpaid. Send check with order to: *Book Dept., Furn. Design & Mfg., 608 S. Dearborn St., Chicago 5, Ill.*



PRODUCTION was increased 300 per cent at the United Cabinet Corp. with this Dubois Machine Co. combination precision coater and double roller coater.

Combination Roller Coater Boosts Cabinet Production

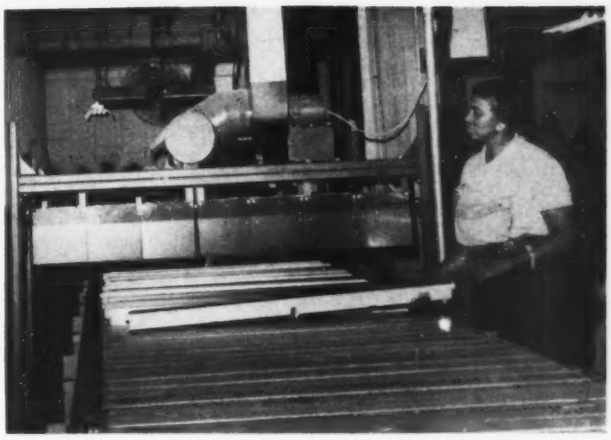
Kitchen cabinet door finishing was increased 300 per cent at the United Cabinet Corp., Celestine, Ind., by the installation of a combination precision coater and double roller coater, the company reported. The combination coater, manufacturer by Dubois Machine Co., Inc., Jasper, Ind., applies precision stain and two coats of sealer in one operation.

The machine was installed recently in order to overcome a bottleneck in door finishing which was hampering scheduled production increases. In addition to the increased production, the precision coater gives a depth

and uniformity in the stain application that could not be duplicated with the method of spraying NGR stain previously used, S. C. Krempp, president, said.

On the finishing line the doors pass through the precision coater and the double roller coater in seconds. After passing through the double roller coater, they are carried on the drying conveyor for a three minute flash-off period, through an infra-red oven for two minutes, then three minutes for cooling. When the doors reach end of drying conveyor, they are ready for sealer sanding.

When applying the finish coats the operator raises the precision coater so that the doors will pass through the double coater only. United Cabinet has found that using a synthetic varnish for both the sealer coats and the top coats eliminates the necessity of changing materials in the double roller coater or of having a separate machine for sealer and top coat. ■



TEN FEET per minute of fiber board are dried continuously on this driQuik ceramic infra-red oven at the Little Rock Furniture Manufacturing Co., Little Rock, Ark.

Ceramic Infra-red Oven Quickly Dries Grain Coat

Grain finish and lacquer sealer is dried on reinforced fiber board panels within one minute in a driQuik ceramic type electric infra-red drying oven at the Little Rock Furniture Manufacturing Co., Little Rock, Ark.

Before entering the driQuik ceramic type infra-red oven, the panels pass through a grainer and roller coater where the grain finish and lacquer sealer is applied. Drying is continuous, with a conveyor moving at the speed of 10 ft. per minute carrying the wood strips through the driQuik oven. Excess lacquer is "flashed" off the panels before they enter the oven. Air from the oven is blown backwards through the pre-drying tunnel. The oven is manufactured by the Dry Clime Lamp Corp., Greensburg, Ind.

Temperature is individually controlled accurately in each of two temperature zones of the oven through the use of two driQuik temperature controllers. The temperature in each zone can be set to within one degree of the temperature desired, merely by turning a knob, said R. G. Morrow, Jr., vice president and plant manager.

Little maintenance is required on the driQuik ceramic type infra-red generators since they have no rods, bulbs, quartz tubes or sockets to burn out, and are unaffected by vibration, jarring, vapors or moisture. ■

SOMETIMES PERFECTION IS REQUIRED!

We ship dimensions, frames and parts by truck and rail.

When it comes to Furniture Dimensions you can depend on Roanoke Woodworking

Highest quality kiln dried Appalachian Hardwoods, master craftsmanship and strict quality controls are your guarantees of superior products when you deal with us. Prompt delivery of knocked-down components is assured also by the use of automated production which constantly maintains preciseness and speed in the manufacturing process.

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FOR DATA CIRCLE FDM NO. 1902

CONTINUED FROM PAGE 14

GENERAL ELECTRIC CO., Laminated Products Dept., Coshocton, O., is offering its Textolite Ruban Mist pattern in cross grain, to further extend the application versatility of this ribbon-stripped design for interior vertical surfaces.

SOUTHBRIDGE PLASTIC PRODUCTS, INC., Southbridge, Mass., will build a completely integrated vinyl plastic plant in Corinth, Miss., to make possible faster and lower cost direct shipments to major users of its products in the midwest and southwest.

HARVEY ALUMINUM, Torrance Calif., established an office at 5805 Excelsior, Minneapolis, Minn., with *Gerald J. Johnson* as manager, to serve metal users in the north central region.

SOUTH RIVER METAL PRODUCTS CO., South River, N. J. manufacturer of television antenna mounting accessories, purchased *Apex Hardware Manufacturing Co.,* Paterson, N.J., manufacturer of phonograph, electronic chassis and kitchen cabinet drawer slides.

WEYERHAEUSER CO., Tacoma, Wash., has formed a new wood products division under *George H. Weyerhaeuser,* vice president. The division will consolidate the lumber and plywood, hardwood lumber and veneer, Silvatek and Roddis divisions. *John L. Aram,* vice president and head of research for hardwood and Silvatek group, was named marketing vice president of the new division and *Jay C. Wallenstrom,* marketing vice president of Roddis, named national sales manager.

POPE & TALBOT, INC., Portland, Ore., has expanded into the plywood field by purchasing the physical assets of the *Columbia Veneer Co.,* Kalama, Wash., The plant has an annual capacity of 70 million sq. ft. and is fully integrated and capable of producting exterior and interior products.

H. K. PORTER CO., INC., Disston Div. recently moved from 1234 W. Washington Blvd., Chicago, to 2567 Greenleaf Ave., Elk Grove, Ill.

B. F. GOODRICH SPONGE PRODUCTS, Shelton, Conn., has developed a new slab cushioning material which combines rubber latex and urethane foam. Called Poly-Texfoam, the material is reported to have cushioning properties of rubber latex foam with tensile strength and sewability of urethane and can be tacked and hog-ringed. It is available in 72-in. width rolls.

Obituary

PETER A. SOLEM, president of Solem Machine Co. and The Merritt-Solem Div., Rockford, Ill. recently passed away.

Customer Expansions & Personnel Changes

LIVINGSTON QUALITY MANOR FURNITURE relocated from Hudson Falls, N.Y. to Dix Ave. at the East-West Bypass, Glen Falls, N.Y. *William Livingston* is owner; *Martin Gersten* is store manager.

TALMAN FURNITURE CO. moved to a new 20,000 sq. ft. store at Gordon and Lawton Sts., Atlanta, Ga. *Buck Talman* is owner of firm, formerly located at 631 Lee St.

TOLLIN FURNITURE CO. will open a $100,000 store about August 1 on Concord Pike opposite Brandywine Raceway, Wilmington, Del.

BALDWIN'S INC. opened a new store at Dauphin and Warren Sts., Mobile, Ala. *Homer Baldwin* is president.

NAWARA BROS., 1000 W. Fullerton St., Grand Rapids, Mich. completed a $28,000 addition to its building, devoted to sale of furniture.

SOUTHEAST FURNITURE SALES opened at Grove Center in Oak Ridge, Tenn. It will serve as a furniture retail store, a dealer showroom for wholesale purchases, and an outlet for stock liquidation for manufacturers and dealers. *Tom Harvey* is owner.

HOUSE & GARDEN FURNITURE, INC., a block-long, 3-story furniture store at 4100 N.E. Second Ave., Miami, Fla. was purchased by *Sharon Garnor* and associates.

PHOENIX FURNITURE CO. recently opened at 2705 High Point Rd., Greensboro, N.C. *Henry G. Tallon* is manager.

LEO PROTIGAL FURNITURE AND CARPET MART is being constructed at 3300 Concord Pike, Wilmington, Del. *Leo Protigal,* owner, expects to open in early summer.

MARK'S OF EL CAJON has moved its furniture and appliance store from 131 E. Rea St. to 457 N. Magnolia, El Cajon, Calif. *Don Cafagna* is owner.

RICKARD FURNITURE CO. is constructing a new store on Route 62 west of Alliance, Ohio. *Stuart and George Rickard* are owners of the firm which now operates at 612 E. Main St., Alliance.

"She's making too many mistakes, get her some new equipment."

DESIGNS IN ITALY

FROM PAGE 16

ber of furniture plants. They employ nearly 140,000, and manufacture approximately $161,300,000 worth of items each year.

During the past few years, for example, worldwide reputation has been won by "Chiavari" chairs which bear the same name as the town where they are manufactured. Also other types of chairs manufactured in the Friuli region have gained popularity in Italy and abroad.

The requirements of modern life and the strong historical Italian traditions have caused Italian furniture producers to emphasize the purpose of each piece, without however losing sight of the artistic side of the various items produced.

Since the beginning of this century, Italian furniture has shown a constant tendency to adopt modern shapes with none of the bias which characterized the various ages and styles after the Renaissance period.

Far from discouraging manual work, the introduction of machinery in manufacturing processes was a valid aid in the improvement of technical standards and allowed a better exploitation of the peculiar qualities of the various kinds of wood used, also favoring the larger use of domestic and imported species.

At present, even though it is too early to speak in terms of a modern Italian style, higher class production shows a marked tendency towards straight, small size shapes, mostly characterized by smooth surfaces, with mellowy tinges and a preference for walnut, mahogany and maple.

Rather than of a modern line, it would be more appropriate to speak in terms of a contemporary line, with emphasis on harmonious shapes and light yet robust frames designed to soften the clear-cut outlines of modern architecture.

This trend however has not led to the complete abolition of traditional models, and many cabinet shops specially in regions like Piedmont, Lombardy, Veneto and Tuscany are keeping alive a tradition in production lines which have remained unchanged for generations.

These craftsmen are particularly skilled in the reproduction of classical models which they manufacture with a modern bias, also in order to meet the requirements of wealthy and exclusive customers from abroad, specially the Middle East, North Africa and North America.

Also thriving is the production of furniture articles for countryside cottages and farmhouses, mostly consisting of lattice and feather-glass work matched in a wealth of ingenious combination and embellished by a carefully chosen variety of colours.

Even though being characterized by a remarkable progress, sales abroad are still rather limited in comparison with the capacity of production of Italy's furniture manufacturing industry. According to recent calculations, exports total a scanty four per cent of the overall production in this area. The limited amount of sales abroad is not due to lack of interest from the various world markets as much as to the limited purchasing capacity of traditional customers who are used to buying the goods after careful personal selection made on the spot.

According to the data released by the Italian Bureau of Statistics, the annual Italian exports of wood furniture rose from $3,548,000 to $4,838,000 during the past four years. The latter figure also represents the amount of furniture sold during the first nine months in 1960, as compared to $3,387,000 worth of sales recorded during the same period in 1959.

Italian articles of furniture are sold on all continents, notably those economically developed, a fact which confirms the growing preference for Italian products.

Italian exports in general are constantly expanding in those markets where Italian furniture is being exported. Many further commercial ex change activities with foreign countries are taking place since the latter have quit their former sources of furniture supply and turned to Italian production in recent times.

Particularly significant is the fact that over 30 per cent of all Italian furniture exports are destined to the United States, a country which is the leading furniture manufacturer in the world, and where customers are rather hard to please.

Also noteworthy is the preference for Italian furniture shown by buyers from the various European Common Market member countries, which has brought about a marked credit position by Italian furniture makers.

Also several EFTA countries are among the more important customers of Italian furniture with Switzerland ranking first among them with more than 20 per cent of its overall furniture purchases from abroad.

The most important business transactions concerning the sale of furniture are usually handled at the several permanent exhibitions open the year round at all the leading Italian furniture manufacturing centers, where domestic and foreign buyers are offered the opportunity of ample choice among the many models on display, which are constantly kept up-to-date with production developments. ■

Statistics for this article were supplied by the Italian Institute of Foreign Trade, Rome, Italy.

FINISH IS MOST IMPORTANT

FROM PAGE 28

little boys. Provincial Oak will take a beating."

For boys, Horton has done a contemporary small bedroom suite which is called Urban.

Colors? He likes them clear and bright—not muddied or muted.

What does he consider to be the designer's relationship to the factory?

"A designer's job is nothing in the world but the coach. Mr. (W. E.) Covington, executive vice-president at Williams, has elected to make me the quarterback.

"We must have teamwork—management, designer, sales organization, decorators, workmen. The night watchman is important.

"I can speak those fellows' language. I can run every machine in the factory." Horton was a former instructor in woodworking in the Navy. He also taught use of power- and hand-tools, and pattern-making.

He has actually worked in a furniture factory—an experience he considers highly valuable for a designer. By knowing the problems at plant level, a designer can help keep production costs low, he points out. The cost factor can be passed on still further, to keep retail price in line.

Horton's practicality and individuality as a designer emerge in other ways. The decorative motif of Village Square, for example, is a single piece of stationary molding which breaks the straight lines of some pieces in the group. This idea came after Horton had researched many antique

TO PAGE 80

FINISH IS MOST IMPORTANT
FROM PAGE 79

shops. "Space age scaling" was attributed to the collection, in an article by a national home furnishings newspaper. Horton himself describes the pieces as "massive, rugged, heavy and sturdy," and able to take abuse.

He is not averse to demonstrating the ruggedness of his design and construction. He is ready to stand on a coffee table, or step on a chair, to prove his point.

A number of featured pieces are in the group. Most talked about has been a day bed heralded as "the first time in two decades that this piece has been included in a grouping." Horton designed it so that, as an alternate to day-bed usage, it can be turned toward the wall and become a youth bed or temporary crib.

Another featured piece is the Little Princess bonnet bed, accompanied by a small blanket chest that can serve as a window seat in a teen-ager's room. A secretary has a compartment for a thin-line television set. "I hid the TV in a nice-looking piece of furniture that fits in," Horton said. An Early American hi-fi cabinet from Village Square is proving popular.

Horton's artistic talents manifest themselves to promotion as well as furniture design. He was responsible for the provocative Village Square announcement brochure, printed on brown Kraft paper and sewed together with black thread, all in Early American flavor.

Ruddy and shaggy-browed, Charles Horton has light blue eyes, wavy blonde hair and a husky voice. He dresses casually, with a leaning towards pale blue shirts and grey flannel slacks.—*Carolyn Knuemann*

DESIGNING WITH WOOD
FROM PAGE 23

not realizing how end grain affects figure in wood, had a disappointment in a case piece. His first mock-up of a new 3-drawer chest showed the center drawer to be radically different in its color tone, especially when oblique lighting was used. The stronger the figure the more marked is the contrast. In this particular instance, the answer was found in slip matching and care in finishing. The end grain, which causes cross-fire figure, adds elegance and distinction to any furniture and in the hands of an expert designer can set the mood that makes a style winner.

Another important point for designers to consider. Are there certain unusual or character-marked veneers of a favored species which have not been exploited or properly portrayed? Often times it is not necessary to select a different species for an accent panel. Within the same species there are frequently veneers of strong character that can give the excitement many designers are looking for to stimulate interest in their furniture group. If more attention were given to this possibility, costly exploration for little known woods might be avoided.

Incidentally, all too often the little known woods are not consistent in their coloration and therefore not suited for furniture which must be similar from cutting to cutting. By using artistic ingenuity in geometric lay-up of the veneer and by employing new toner finishing techniques completely new effects with reliable consumer appeal can be achieved. Some of these will be covered in subsequent articles.—*R. D. Behm*

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CERTIFIED WOOD PARTS
FROM PAGE 45

counts has a much better opportunity to arrive at a better yield from his lumber than the furniture plant using only a few assorted lengths.

These are only a few of the facts why I believe the trend will be to the use of more certified hardwood dimension wood parts, both semi and finished. On behalf of the Hardwood Dimension Manufacturers Association, let me extend to you a cordial invitation to visit any of these modern member plants. You will be impressed with the modern machines used in the various operations, with the new ideas and techniques that are so freely exchanged between members, and you will see for yourselves the reasons why Certified HDMA Wood Parts will save you money.—*Wendell W. McMillen.*

The preceding article was condensed from an address given by Mr. McMillen before a joint session of the Forest Products Research Society and the Jamestown Area Furniture Manufacturers Assn., at Jamestown, N. Y

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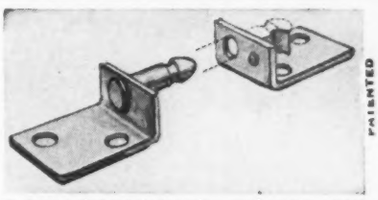

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July 9-14 — **Portland Furniture Market**
Memorial Coliseum

July 9-13 — **Seattle Furniture Market**
Northwest Furniture Mart Bldg.
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July 10-14 — **High Point Furniture Market**
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July 17-21 — **San Francisco Furniture Market**
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June 25-30 — **American Society for Testing Materials**
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September 16-19 — **National Assn. of Furniture Manufacturers 33rd Annual Convention & 7th Annual Supply, Equipment & Fabric Fair**
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September 21-22 — **Woodworking Machinery Distributors Meeting**
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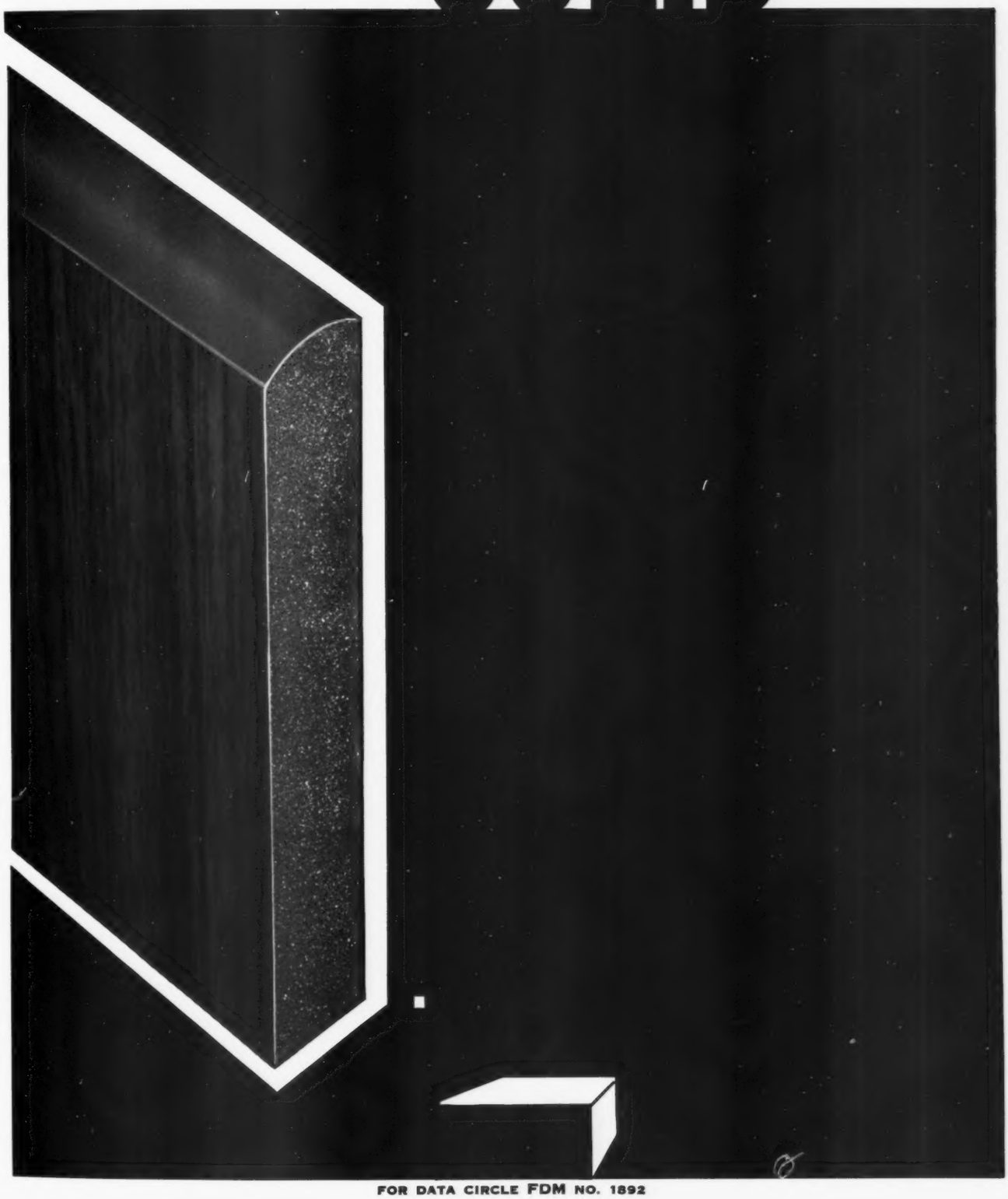

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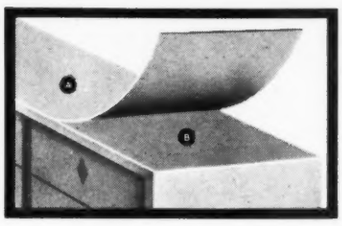

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